SEPTEMBER, MDCCCLXIII.

THE ZOOLOGIST:

A
POPULAR MONTHLY MAGAZINE
OF
NATURAL HISTORY,
AND
JOURNAL FOR RECORDING FACTS AND ANECDOTES
RELATING TO
QUADRUPEDS, BIRDS, REPTILES, FISHES, MOLLUSKS,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CCLXI.

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JOHN VAN VOORST, PATERNOSTER ROW.

Price ONE SHILLING.

Zoological Miscellany.

The Boquetin or Steinbock (Capra Ibex). — The noble horns, which are its most characteristic feature, are, in a full-grown buck, at least two feet long, and often much more, and of a deep dark olive, inclining to black in some individuals. They are gracefully falcated or curved back, and each year's growth is marked by a stout protuberant knotty ring, with often a lesser intermediate one between each, more or less distinct. In the pair I possess, which are two feet long, there are eight of these yearly rings; but in others I have seen, as the magnificent specimens in Baron Peccoz's collection, they were much more numerous, reaching to twelve and eighteen, and the horns themselves three feet long. Their thickness at the base is proportionate, and the weight is something enormous for an animal of such size to carry. The muscular development of the head and neck of the buck is accordingly extremely powerful, and, as will be seen, gives them a much more rounded and full appearance than the common goat, of which it has been sometimes supposed to be the parent stock. The ears are short and placed far back; and, like the chamois, they have no lachrymal gland. The whole frame is, indeed, most muscular, and much larger as well as more powerful than the chamois. Its legs are stouter and thicker, and the hard hoofs spreading. The strength of their sinews is such that Tschudi says they will scale a rock fifteen feet high, and almost perpendicular, in three steps, and can stand firmly on the top of a gate. A young tame ibex has been seen to jump clean over a man's head without taking a run. The female is very easily distinguished by the smallness of her horns. Those of an old one given me by Baron Peccoz, though with fourteen distinct rings, are only seven inches in length. They generally go in small herds, pairing in January; and later on the old bucks separate, and live in solitary stateliness on the highest peaks. The young one is born in June, and a few days after its birth it is almost impossible to take it alive, such is its agility. The ibex has been found to produce a fruitful hybrid with the common goat, and a numerous progeny of these has been reared at Brandenburg. The colour of the young animal is much lighter than that of the adult. The skin of the one I obtained at Commayear is of a grayish brown, approaching very nearly to mouse-colour, and lighter underneath. When full-grown they are of a deeper brown, and the legs and other markings still darker. Mr. Wolf describes the colour of their summer coat as very brilliant, showing in the male a characteristic light red-colour on his hind quarters and behind the elbow, in both which places it is joined by almost black markings on the under side; and the black and white of the legs and belly are very striking. The winter coat is very much longer and coarser. Though often so represented, they have no proper beard, only a tuft of long stiff hair which grows under the chin; but in its shaggy winter coat, as represented in the illustration, it is much longer and denser, disappearing again in the summer. The tail is always erect, dark above and white underneath.—*From the 'Italian Valleys of the Alps,' by the Rev. S. W. King, M.A., F.R.G.S.*, p. 340.

Instinct in Infusoria.—Mr. Carter watched an Actinophorous Rhizopod extracting starch grains from a ruptured cell, looking like a spore; the creature then retired some distance off, and then returned. Although no more starch grains were protruding, he contrived to extract some from the interior. "This," he says, "was repeated several times, showing that the Actinophrys instinctively knew that these were nutritious grains, and that they were contained in this cell, and that although each time, after incepting a grain, it went away to some distance, it knew how to find its way back." He likewise mentions the cunning of an Amœba, which crawled up the stem of an acineta, and placed itself round the ovarian aperture, so as to receive an infant as soon as it was born. He observes that "These facts evince an amount of instinct and determination of purpose which could hardly have been anticipated in a being so low in the scale of organic development."—*'Intellectual Observer' for August*, 1863, p. 67.

Sexes of Pallas' Sand Grouse.—I shall feel extremely obliged if any correspondent will describe carefully the plumage of the male and female sand grouse. I take it for granted that all the specimens described as containing two large eggs are males, a conclusion apparently shared by Mr. Stevenson; while all those with minute eggs are unquestionably females: but the external characters of sex are those I wish more particularly to have defined: a very marked difference of plumage exists, but I am not confident that it has hitherto been either correctly defined or applied.—*E. Newman.*

Description of the Larva of Epione vespertaria. — The eggs are laid in July or August, two, three or four together, on any object the female may find at hand; they are flattened and depressed in the centre, smooth and of a pale yellow colour when just laid, changing in a few days, if fertile, to a bright deep pink, which colour they retain until the following May, when the time for hatching approaches; they then become deeper in colour, and finally lead-coloured: the larva lives on the leaves of Salix phylicifolia, and feeds for about three weeks: when full fed it rests in a slightly bent position, but if annoyed it falls off its food-plant, attached by a thread, and remains perfectly motionless on the earth, bent nearly double and feigning death. Head semiporrect, quite as wide as the body, and emitting numerous scattered hairs: body very uneven; the 5th segment appears restricted, it is evidently of less circumference than the rest; the divisions of the segments are deeply incised; there are no humps that will admit of a description. Head purple-brown, mottled on the crown; the clypeus, and frequently also a spot on each side of it, pure white; the base of the antennal papillæ is also white: body purplish brown, variegated with both darker and lighter markings; there is a dark but indistinct narrow median dorsal stripe, traversed throughout by a pale thread-like stripe, and bordered on its side by another narrow pale line; all these lines are indistinct and inconspicuous; exterior to them, on the 5th segment, are two white subdorsal lines, each composed of several white dots: between the 5th and 6th segments is a lozenge-shaped mark, rather paler than the rest of the dorsal surface; the 6th segment has four dorsal white dots, disposed in a quadrangle; the 7th, 8th, 9th, 10th, 11th and 12th segments have each a pair of such dorsal white dots placed transversely; on the 6th segment is a transverse series of four blackish blotches, the outer or lower of which on each side includes a black spiracle in a pale ring; on each side of the larva are a few white dots, in addition to those I have mentioned: belly rather paler than the back, but each segment has two transversely-placed black dots, and in the incisions between the segments are also three other longitudinal dark markings; the dark dots on the belly and other parts of the body are minute warts, and each emits a short black bristle; legs and claspers, as well as the ventral surface between the ventral and anal surface, purplish brown. It spins a very slight web on the surface of the earth near the end of June, and the imago appears in July: the females are difficult to find, being of retiring habits and very sluggish: the males fly freely. I am indebted to Mr. Birks, of York, for specimens of this larva.—*Edward Newman.*

Description of the Larva of Nyssia zonaria. — The female lays her eggs in April, inside the sheath of the commoner grasses that occur on the sand-hills on the Cheshire coast: this singular habit is also that of the moths in captivity, or they will avail themselves of any kind of straw provided for them, always depositing the eggs within the sheath: the eggs are closely packed together, but without much regularity; at first they are of a pale pea-green, but soon change to a dark lead-colour, and afterwards to a dull brown, and the young larva emerges the first week in May: the infant larva differs but little from the adult, except that the lateral stripe is pale and inconspicuous: as the larva increases in size it generally rests with the back arched, both legs and claspers being attached to the food-plant: on being annoyed it is apt to fall from the food-plant, always, however, attaching itself by a thread; when on the ground it remains perfectly quiescent and bent double. Head about as wide as the body, not notched on the crown: body uniformly cylindrical, without warts or excrescences. Head gray, irrorated with black; dorsal surface of the body gray, tinged with ochreous, and delicately marked with black dots, which are arranged in short and very irregular longitudinal series: on each side is a moderately broad stripe, which includes the spiracles, of a clear bright yellow; it commences immediately behind the head, and terminates on the 12th segment; ventral surface black, with a yellow lunule above each of the legs, and two approximate, inconspicuous and sinuous narrow median stripes of a dusky gray: legs and claspers dingy black: it feeds during the summer months chiefly on Achillea Millefolium (yarrow), but also on grasses; indeed it does not seem very fastidious about its food-plant: when full-fed it buries itself in the loose sand, sometimes to the depth of four inches, but generally not so deep: there is no perceptible web or cocoon. The pupæ remain in the sand throughout the winter, and the perfect insects begin to emerge at the end of February, and continue to come out until the end of March. I am indebted to the Rev. Percy Andrews, who received them from Mr. Birchall, for specimens of this larva, and to Mr. Birchall for information respecting its economy.—*Edward Newman.*

Description of the Larva of Abraxas grossulariata.—I have seen the females of this species busily engaged in oviposition, not only in the evening, but even in the middle of a warm summer's day, depositing a single egg on a leaf of gooseberry or black currant, and then flying off to another. I once counted ten females simultaneously occupied in this manner along a garden wall less than eighty yards in length. Like the eggs of diurnal Lepidoptera, they remain but a short time before hatching: the young larva feeds for two, three or four weeks, rarely longer, and then spins together the edges of a gooseberry-leaf, having first taken the precaution of making the leaf fast to its twig by numerous silken cables, which prevent the possibility of its falling when dehiscence takes place in the autumn: in the little cradle thus fabricated the infant larva feeds as securely and as fearlessly as the sailor in his hammock; snow storms and wintry winds are matters of indifference to him; but no sooner have the gooseberry-bushes begun to assume their livery of green in the spring, than instinct informs him that food is prepared to satisfy his appetite; so he cuts an opening in his pensile cradle, emerges, and begins to eat. The larva commonly rests in a straight posture, lying parallel with the branch; but when annoyed it elevates its back, and tucks in its head until it is brought into contact with the abdominal claspers; if the annoyance be continued it falls from its food, hanging by a thread, rarely falling to the ground; but when this is the case it is bent double, and remains a long time in that posture. Head rather small, prone, partially retractile into the 2nd segment, scarcely notched on the crown; body of uniform thickness, without excrescences. Head emitting a few strong black hairs, intense black, with the exception of the clypeus and base of the antennal papillæ, which are white: body cream-coloured, with a reddish orange lateral stripe below the spiracles; this is conspicuous on the 5th, 6th, 7th, 8th and 9th segments, less so at each extremity: the whole of the 2nd segment, and the ventral surface of the 3rd, 4th, 10th, 11th, 12th and 13th segments, is of the same orange-red colour as the lateral stripe; along the middle of the back is a series of large but irregular black spots; these are generally three in number—two amorphous, transversely placed and small, the third trapezoid, much larger, and quite as broad as the other two; they assume an altered form on the 10th, 11th and 12th segments; below these is a series of small streak-like black spots, and again below these, but above the lateral orange stripe, is an irregular series of rather larger amorphous black spots; below the orange stripe is an interrupted black stripe on each side, and on the belly are two distinct and continuous black stripes: legs black: claspers blotched with black. Feeds in gardens on Ribes grossularia and R. nigrum (gooseberry and black currant), and more rarely on R. rubrum (red currant), greatly preferring those trees of all three species when trained against a wall; in woods and hedges on Prunus spinosus (blackthorn), which I believe to be its natural food: it is full-fed in May, when it spins a very slight and perfectly transparent cocoon, in which it fastens itself by the tail and changes to a pupa, the web or cocoon in no way hiding the pupa, which at first is entirely yellow, but soon becomes black and glabrous, with seven yellow bands, three of which, the 1st, 2nd and 3rd, are dorsal only; the others are complete circles; the tail terminates in three or more very distinct hooks, which constitute its means of attachment to the interior of the cocoon. The imago appears on the wing about Midsummer.—*Edward Newman.*

Description of the Larva of Hybernia aurantiaria. — These larvæ, when first batched, are of a deep ochreous colour, which gradually darkens until nearly black, with the dorsal line light ochreous; subdorsal lines grayish white, and the anal segment light brown. When about three weeks old they are the same uniform ground colour, but with the subdorsal lines more indistinct, and the dorsal one brighter than when younger. When full-fed they are dusky greenish black, with the subdorsal lines (generally) invisible, and the dorsal line light brown. I found them liable to great variation (but chose typical ones to describe); one was pale greenish brown; another light yellow, with only a narrow black stripe to separate the dorsal from the subdorsal lines. I fed them on Cratægus oxyacantha (whitethorn), and found they fed well on it, chiefly by night. They go to earth when changing to pupæ, and spin a slight cocoon. The pupa is about a quarter of an inch long, reddish brown in colour, with a dark line down the back.—*W. S. Hornby; Clifton, York.*

Description of the Larva of Cheimatobia brumata. — The apterous female of this very common species lays its eggs in the crevices of the bark of various trees and shrubs during November and December: the larvæ make their appearance early in the spring, and commence their destructive career by eating into the young unexpanded buds: at this time of the year the bullfinches and titmice render the most important service to the gardener by their activity in devouring this little garden pest: when the leaves have begun to expand each larva draws two or three together, and unites them by a silken web, coming partially out to feed, and retiring again within its domicile when satisfied. When full-fed it rests with its head on one side, and curled round so as to touch the middle of its body. Head scarcely so wide as the body, scarcely notched on the crown: body rather obese, decreasing in size towards each extremity. Head pale green, semitransparent, the cheeks often blotched with smoky brown on each side just in the region of the ocelli: body glaucous-green, with a narrow median blackish stripe on the back, and three narrow white stripes at equal intervals on each side; the third or lowest one on each side includes the spiracles; the first of these three stripes is the most distinct; the second least so, being interrupted and irregular; the third or lowest stripe includes the spiracles: legs and claspers transparent green: it is a variable larva, the colour sometimes green, sometimes smoky brown, approaching to blackish; the stripes in different individuals differ greatly in distinctness; the median dorsal stripe is apparently in great measure due to the food in the alimentary canal being visible through a very transparent skin; it is sometimes bordered on each side by an obscure white stripe, thus making eight in all. It is almost useless to specify any tree as the food-plant of this ubiquitous larva: I have beaten it by thousands from Carpinus Betulus (hornbeam) in Epping Forest, and I am unable to mention a tree the leaves of which it does not devour: it is full-fed in May, and then descends to the earth and changes to a pupa near the surface.—*Edward Newman.*

Description of the Larva of Larentia salicata.—The female lays her eggs on Galium verum, Galium saxatile, and probably other species of bedstraw; in confinement it not only feeds on bedstraw, but thrives equally well on Asperula odorata, a plant much to be recommended as growing luxuriantly in London gardens, and as furnishing an acceptable food to nearly all those larvæ which in a state of nature feed on the different species of bedstraw. The larvæ of Larentia salicata, when full-fed, rest with the claspers attached tightly to the food-plant, and from the abdominal pair the body ascends at a right angle, the anterior segments being bent gracefully over: when annoyed the peculiarities of this posture become intensified, the anterior segments assuming the form of an Ionic volute, of which the tightly-tucked-in head is the centre; this figure becomes more and more rigid as the annoyance continues, until the larva abandons its hold on the food-plant, rolls itself in a compact ring, and, feigning death, falls to the ground. Head rather small, semiporrect, not notched on the crown, beset with a few hairs: body of uniform thickness throughout, without humps or warts, but beset with scattered hairs, and having a rather remarkably conspicuous tuberculated double skinfold along each side below the spiracles. Head pale, semitransparent umber-brown, spotted with dark umber-brown: body umber-brown, with four narrow approximate parallel whitish stripes, extending the entire length of the back; on each side below the spiracles, and comprising the skinfold already noticed, is a broad pale somewhat flesh-coloured stripe; the ventral surface is rather pale along the middle, but darker on the side where it touches the pale lateral stripe; it also exhibits traces of four parallel narrow stripes, of which the inner pair are very obscure; feet and claspers similar in colour to the darker parts of the body. Feeds on Galium verum and Galium saxatile. I am indebted to Mr. Doubleday for specimens of this larva, which he received from Mr. Robinson, of Cockermouth. They were full-fed on the 18th of May, and spun together the leaves of the Asperula, incorporating particles of cocoa-nut husk, and forming tough cocoons. This species is regularly double-brooded.—*Id.*

Description of the Larva of Lobophora lobulata.—The egg is laid in the spring, on Lonicera periclymenum (honeysuckle), and perhaps also on Salix caprea (sallow), on which shrubs, as well as Salix viminalis, it feeds freely in confinement. When full-fed, which is towards the end of June, it rests in a nearly straight position, the anterior extremity being slightly raised, and the middle of the back slightly arched. Head prone, hidden from above by the anterior margin of the 2nd segment, not perceptibly notched on the crown: body rather obese, rather depressed, with a conspicuous dilated skinfold on each side just below the spiracles, and two short points directed backwards just below the anal flap. Head dull green, with intensely black ocelli: body dull opaque green above, and a narrow white stripe on each side, including the dilated skinfold; this white stripe extends from the head to the apex of the anal flap; anal points slightly tinged with pink; belly with a broad median glaucous stripe, between which and the white lateral stripe the belly is nearly concolorous with the back; legs semitransparent pale green; claspers green, slightly tipped with pink. It spins a slight web on the surface of the ground, and, changing to a pupa, remains in that state throughout the winter. I am indebted for a supply of this larva to Mr. Nicholas Cooke, of Liscard.—*Id.*

Description of the Larva of Leucania Phragmitidis. — The eggs are laid in July, on the stems of Arundo Phragmites (the common reed), and are soon hatched, enter the stem and begin feeding; about the end of the following May they may be found in the stem, in the first or second internode from the top. When full-grown the larva has a very maggot-like appearance; if removed from the interior of the reed it does not feign death or roll itself in a ring, but is restless, and crawls incessantly, but not with great activity. Head very small, extremely glabrous, porrected in crawling: body obese, slightly attenuated towards both extremities; on the dorsal surface of the 2nd segment is a semicircular corneous plate, the convex margin of which is behind; the dorsal surface of the 13th segment is entirely covered by a similar plate; the incisions of the segments are clearly marked. Head intensely black: body dingy white, with a large amorphous ill-defined purplish patch on each side of each segment, except the 2nd and 13th; the corneous plate on the 2nd segment is glabrous and brown; below it on each side are three black dots: on the 3rd and 4th segments is a transverse dorsal series of ten black dots; on each of the following segments are four such dorsal dots; the anterior pair on all the segments, excepting the 11th, rather nearer together than the posterior pair; on the 12th segment they form an exact quadrangle; on the sides are two series of similar dots; every one of these dots emits a black bristle; ventral surface of the 5th and 6th segments purplish, of the others dingy white; legs rather long, glabrous, corneous, dark brown; claspers dingy semitransparent white, slightly restricted at the base, a peculiarity which gives them an elongate-linear and peculiar appearance About the middle or towards the end of June the larva gnaws a perfectly circular hole in the stem of the reed, and, descending to the ground, changes to a pupa amongst damp moss; the perfect insect emerges in July. I am indebted to Mr. Brown, of Cambridge, for this larva: he informs me it is plentiful in Wicken Fen.—*Edward Newman.*

Description of the Larva of Noctua Augur.—The egg is laid in June, is hatched in June or July, and hybernates early; in the spring it again begins to feed on Cratægus oxyacantha (whitethorn), Salix caprea (sallow), and other shrubs. When full-fed, which is usually at the end of May, it rests in a straight position, but falls off its food-plant and rolls in a ring when disturbed. Head of much less circumference than the body, semiporrected, and slightly notched on the crown; in moving the head it stretches forward, and moves about in a very leech-like manner: body cylindrical, slightly attenuated towards the head, and slightly incrassated dorsally on the 12th segment. Head very shining, pale pellucid brown, reticulated and variegated with darker: body excessively smooth, dull purplish brown, with several darker markings, more particularly a narrow waved rich brown stripe along each side, including the spiracles; a transverse mark of the same colour, and dilated at each extremity, on the 12th segment; on various parts of the back there are also small round white spots, two on the anterior part of each segment, beginning with the 3rd, and two rather less distinct on the posterior part: belly, claspers and legs pale and semitransparent. It changes to a pupa on or near the surface of the ground, and the perfect insect emerges from the beginning to the middle of June. I am indebted to Mr. Thomas Huckett for this larva.—*Id.*

Description of the Larva of Tæniocampa gothica.—The egg is laid in the spring, and the larva feeds on Salix caprea (sallow), Cratægus oxyacantha (whitethorn), Quercus Robur (oak), and many other trees and shrubs: Mr. Doubleday has observed it feeding on laurel in his own garden. When full-fed, which is usually in June, it falls off the food-plant if annoyed, and feigns death, rolling itself in a compact ring, with the head on one side. Head glabrous, narrower than the body: body obese, uniformly cylindrical, quite smooth. Head pale transparent apple-green, with black ocelli; body delicate apple-green, with a broad and very conspicuous stripe on each side, of a pale glaucous-green, approaching to white; this stripe commences immediately behind the head, and terminates in the anal claspers; it passes below the 1st and the 9th spiracles, but includes all the rest, and is gradually attenuated towards both extremities: there is a very narrow pale yellow median dorsal stripe, and exactly intermediate between this and the broad lateral stripe is another very narrow pale yellow stripe, less continuous and less distinct; there are numerous minute yellow markings throughout the dorsal surface, in addition to the three narrow stripes I have mentioned, and along the upper margin of the brown lateral stripe the green is tinged with smoky black: belly, legs and claspers pale semitransparent green. Buries itself in the earth and changes to a pupa about the middle of June: the moth appears in July and August, and hybernates. I am indebted to Mr. Wright for this larva.—*Edward Newman.*

Description of the Larva of Dianthœcia capsophila. — The egg is laid on the seed-pods of Silene maritima, and the young larva enters the capsule and feeds on the seed; as it increases in size it devours the walls of the capsules, and even the calyx. When full-fed it rolls itself into a ring, and feigns death if removed from its food. Head small, porrected in crawling, glabrous, beset with scattered hairs: body obese, smooth, cylindrical, slightly attenuated towards each extremity. Head pale semitransparent brown; ocelli black, and a black dot at the base of each hair: body pale wainscot-brown, with fine paler longitudinal stripes; the most conspicuous of these is median and dorsal; the widest is lateral, and includes the spiracles, which are pale in the centre, but bordered with black; exactly intermediate between the median dorsal and the spiracular lateral stripe, is one less conspicuous and rather narrower than either; the dorsal surface of the 2nd segment is glabrous, subcorneous, and darker brown, but the median dorsal stripe passes distinctly through this darker portion; the belly, legs and claspers are very pale. These larvæ were full-fed on Midsummer Day. I am indebted to Mr. Birchall for a supply, which I fed on Silene inflata, in the absence of their proper food-plant: they became pale brown pupæ on the 11th of July. The hill of Howth, near Dublin, is the only known British locality.—*Id.*

Notes on Ino Geryon.— On the 22nd of May last I and my friend Mr. Bibbs took a trip in search of Ino Geryon, and succeeded in taking upwards of one hundred pupæ. Each of us took the larvæ, pupæ and imagos on the same day. The pupæ appear to be entirely confined to a particular species of moss, Hypnum triquetrum (a very common kind), in which they lie concealed. There is another peculiarity: we could not discover any pupæ where the moss was either long or short; the medium length or growth alone contained them. We searched other mosses diligently on the very spot, and adjoining the species already mentioned, but not one cocoon were we able to find therein. Only about one-half of the pupæ we had taken produced the perfect insects; some had been stung, and others appear to have been old cocoons. Mr. Bibbs has obtained eggs from the insects bred at home, which were of a dullish yellow colour; these are hatched, and the larvæ are feeding on Helianthemum vulgare (common rock-rose), which I procured for them from a distance, as the plant does not grow anywhere near our residences. This without doubt is its proper food, and is very abundant on the limestone hills where the insect is found. Rumex acetosa (sorrel) was placed with the Helianthemum vulgare, but the larvæ rejected it, and would eat the latter, even though in a faded condition, rather than attack the former when freshly procured. I have not been able to find any sorrel at or near to the locality where the insect breeds. When I captured it several years ago, I believed it to be a distinct species from Ino Statices. Now, as the larvæ hybernate, and from the foregoing facts and peculiarities in its history, I am the more confirmed in my former belief that it is totally distinct from Ino Statices. — *Abraham Edmunds; The Tything, Worcester, July* 18, 1863.

[Received just after the preceding sheet was printed (see Zool. 8694), or I should have been very glad to have availed myself of the information it contains. — *Edward Newman.*]

Dyschirius elongatulus at Deal. — I have the pleasure of recording the capture, at Deal, towards the end of May last, of a fine pair of Dyschirius elongatulus, *Dawson.* This rarity I discovered while digging up the burrows of the conspicuous and abundant Bledius tricornis, in the immediate neighbourhood of Sandown Castle. My other captures were few and unimportant.—*H. Montague; Stockwell, July* 15.

Captures of Coleoptera near Wickham.—I have taken the following species (amongst many others) in the sand pits at Shirley, during the past spring:—

Aleochara bisignata
Ilyobates propinqua
I. forticornis
Callicerus rigidicornis
C. obscurus (both not uncommon)
Calodera umbrosa
Tachyusa scitula
Oxypoda exigua
O. præcox (*Wat. Cat.*)
O. rufula
O. annularis
O. brachyptera
O. misella
Homalota divisa
H. occulta
H. scapularis
Lamprinus saginatus
Mycetoporus longicornis
Philonthus procerulus
Stilicus geniculatus
Scopæus sulcicollis (abundant)
Bledius longulus
Platystethus capito
Anisotoma (*nov. spec.?*)
Colon brunneus
Scydmænus angulatus
S. pusillus
Sibynes primitus
Gronops lunatus (plentiful)
Ceuthorhynchus Crux
Gymnetron Veronicæ
Orthochætes setiger
Crepidodera ventralis
Phyllotreta Lepidii
Thyamis Lycopi
T. Nasturtii
T. atricapilla
Psylliodes Hyoscyami

—*E. C. Rye; 284, King's Road, Chelsea, S.W.*

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

July 6, 1863.—FREDERICK SMITH, Esq., President, in the chair.

Donations.

The following donations to the library were announced, and thanks returned to the several donors:—'Transactions of the Zoological Society of London, Vol. iv. Part 7, Section 2; Vol. v. Parts 1 and 2. 'Proceedings of the Scientific Meetings of the Zoological Society of London,' 1861, Part 3; 1862, Parts 1—3; presented by the Society. 'Schriften der Königlichen Physikalisch-ökonomischen Gesellschaft zu Königsberg,' 1862, Parts 1 and 2; by the Society. 'Exotic Butterflies,' Part 47; by W. W. Saunders, Esq. 'Illustrations of Diurnal Lepidoptera,' Part 1 (Lycænidæ); by the Author, W. C. Hewitson, Esq. 'Verhandlungen der Kaiserlich-Koniglichen Zoologisch-Botanischen Gesellschaft in Wien,' Vol. xii.; by the Society. 'Personen, Orts und Sach-Register der zweiten fünfjährigen Reihe (1856—1860) der Sitzungsberichte und Abhandlungen der Wiener Kais. Konigl. Zoologisch-Botanischen Gesellschaft;' by the Society. 'Neue Crustaceen, gesammelt während der Weltumseglung der K.K. Fregatte Novara, zweiter vorlänfiger Bericht;' by the Author, Dr. Cam. Heller. 'Sitzungsberichte der Konigl. bayer. Akademie der Wissenschaften zu München,' 1862, ii. Parts 3 and 4; 1863, i. Parts 1 and 2; by the Academy. 'Proceedings of the Royal Society,' Vol. xii. No 55; by the Society. 'The Intellectual Observer,' No. 18; by the Publishers. 'The Zoologist' for July; by the Editor. 'Fifty-six Memoirs by M. le Dr. Léon Dufour, from various scientific Periodicals and Transactions;' by the Author. 'The Journal of the Society of Arts' for June; by the Society. 'The Reader' for June; by the Editor. 'A List of the Butterflies of New England;' by the Author, Samuel H. Scudder, Esq.

Special Vote of Thanks.

On the proposition of Mr. Dunning, seconded by Mr. S. Stevens, a special vote was unanimously passed, returning thanks to Mr. W. W. Saunders for his hospitable reception of the Society at Reigate, on the 20th ult.

Exhibitions, &c.

Professor Westwood, referring to the exhibition by the President, at the June meeting, of some hermaphrodite hive-bees, made some remarks as to the bearing of that exhibition upon the question of parthenogenesis in bees. He considered that the fact of the existence of a hermaphrodite was inconsistent with the truth of the theory of parthenogenesis. The President, on the contrary, did not think the fact necessarily inconsistent with the theory, but probably explicable by and referable to some imperfection of the organs of the queen bee from which the hermaphrodite was born.

Mr. S. Stevens exhibited a large collection of South-Australian insects, principally Coleoptera, and containing many novelties; they had been collected by Mr. George French Angus, who had recently returned to this country from Australia.

Mr. Waterhouse exhibited Carabus auratus, captured on the coast of Kent: four specimens had been taken by Mr. Brewer, running about in the hot sunshine; the locality was between Dover and Hythe, but was not more precisely stated.

The President mentioned that about twenty years ago Mr. Walton had brought thirty living specimens of C. auratus from France, and had turned them loose on the coast between Dover and Deal.

Mr. Stainton exhibited specimens of Elachista apicipunctella bred by Herr Albarda, by whom the larva had been first observed two years ago. The following note, communicated by the Dutch entomologist, was read:—

Habits of Elachista apicipunctella.

"These larvæ mine the leaves of Holcus Lanatus and sometimes of Festuca pratensis and F. elatior, from November to March. They mine downwards from the point of the leaf, occupying the entire breadth; the mine is not conspicuous. On the upper side of the leaf the epidermis remains flat, and is but slightly discoloured (especially in the Festucæ), the under side being more puckered and yellowish. The grayish excrements are irregularly scattered throughout the mine. The larva seems to prefer those leaves which lie flat on the ground and are covered by the others, and may thus have escaped observation. In mild winters, like the past, the larvæ feed continuously, and are full-fed in February, but when the cold is more intense they remain motionless until the frost is over, and then continue the same mine, notwithstanding that the leaf may be somewhat withered. When nearly full-fed they remove to a fresh leaf.

"When full-fed the larva seeks a convenient corner, commonly the base of the leaf, to undergo its change, and spins a very slight web of parallel threads, surrounding the middle of the body with a silken girth. They remain one or two weeks before they change to the pupa state, after which the perfect insect appears in about five or six weeks, according to the weather.

"The imago is seldom seen on the wing, but can easily be captured in the afternoon, when they are sitting on the leaves of the food-plant, the females having commonly their wings erected perpendicularly, as it seems to attract the males.

"This insect is not at all uncommon here (at Leeuwarden). On sandy localities, where Holcus lanatus abounds, the larvæ are probably more scattered, but along the roads in clayey localities, where that plant occurs here and there, a single tuft is often tenanted by more than thirty larvæ.

"A summer brood, though very probable, has not yet been observed."

Professor Westwood mentioned that, during a recent trip in the Italian portion of the Tyrol, he had observed the leaves of the walnut trees to be blackened throughout the distal half, and apparently scorched; on examination they were found to be rolled up by the larvæ of one of the Tineidæ, which had proved to be Gracilaria rufipennella, a species which ordinarily fed on the plane tree. The pupæ were of singular form, the antenna case in the males extending beyond the extremity of the abdomen.

Professor Westwood exhibited drawings of the larvæ and pupæ of the genera Coronis and Castnia: those of Coronis were taken from the collection of Dr. Kaden at Dresden, which was very rich in illustrations of the transformations of the Lepidoptera of Granada, which had been formed by Moritz; the larva was supplied with spines on its back, like some of the Notodontidæ. The larva of Castnia burrowed in the stems of trees, and was a long fleshy grub, like that of a Longicorn beetle, whilst the pupa had its abdomen furnished with two rows of reflexed spines, which enabled it to work its way along the burrows, after the manner of Cossus.

Professor Westwood exhibited specimens and photographs of Papilio Castor and P. Pollux. In the 'Arcana Entomologica' he had described those forms as distinct species, but Mr. George Gray, conceiving them to be the sexes of one species, had given P. Pollux as a synonym of P. Castor; the Professor, however, exhibited males of both forms and females of P. Pollux, and he exhibited a specimen of P. Castor from the collection of Mr. Semper, of Altona, one of the wings of which was partly of the ordinary form of the male, whilst the remainder of the wing had the markings and coloration which (judging from analogy) the female of P. Castor would possess. From a consideration of these circumstances the Professor was still disposed to maintain the specific distinctness of the two forms. Apart from its bearing on this question, Mr. Semper's specimen of P. Castor was extremely interesting, as exhibiting a new phase in hermaphroditism; all the hermaphrodites with which he was previously acquainted had some of their members of the form peculiar to one sex, and some of the form peculiar to the other sex, but each limb was completely of one sexual form; here, on the other hand, the wing was partly male and partly female; the wing itself was hermaphrodite, the limb was gynandromorphous. It was to be noticed, moreover, that this gynandromorphism did not extend through equal and corresponding portions of the upper and lower surfaces of the wing, but the sexual variation in marking and colour was spread over a larger space on one surface than on the other; if he might so speak, the gynandromorphism was in the plane of the wing, not perpendicular to that plane, and the surface of contact between the male and female portions of the limb could not be traced out by the motion of a straight line kept constantly perpendicular to the wing-plane.

Professor Westwood exhibited the imago of Eucheira socialis, a Mexican species whose larvæ were gregarious, and the family-cocoon of which had been described by him in an early volume of the Society's 'Transactions.'

Mr. Miller exhibited a specimen of Œcophora Lambdella, taken by Mr. Butters, near Grays, Essex.

Mr. Stainton exhibited some hazel leaves which had been mined by the young larvæ of Micropteryx fastuosella, and which he had recently gathered in the neighbourhood of Marlborough; there were numerous leaves bearing traces of the former presence of the larvæ, but in one leaf only did he find a larva actually present; careful search at an earlier period of the year would doubtless lead to the breeding of the species in this country, and to a corroboration of the observations of Herr Kaltenbach.

Mr. Stainton mentioned that during his visit to Marlborough he had had the pleasure of awarding a prize which had been offered by one of the masters at the College for the best collection of insects formed during the previous year. There were seven competitors, each of whom, in addition to the production of his collection, was put through an examination in the elementary parts of the Science; and the result was so satisfactory that Mr. Stainton was led to hope that something similar would be done at other public schools, which would thus serve as nurseries for the Entomological Societies of the Universities.

Mr. Stainton exhibited his collection of original drawings of the larvæ of Tineina, a portion of which, with descriptions, had already appeared in the 'Natural History of the Tineina,' whilst the remainder were intended for publication in the future volumes of that work.

Mr. Moore exhibited some elm leaves which had been attacked by a species of Aphis; and leaves of Veronica Chamædrys bearing galls produced by a dipterous larva.

The President, on behalf of Mr. Marshall, exhibited Platyrhinus latirostris, numerous specimens of which were sent for distribution amongst the members.

Mr. E. Shepherd exhibited Ilyobates propinqua, Scopæus sulcicollis and Platystethus capito, all captured by himself near Reigate, on the occasion of the Society's visit to Mr. Saunders on the 20th ult.

Mr. Dunning read the following extract from a letter from Mr. Edwin Birchall, dated Birkenhead, June 7, 1863:—

"I have bred three specimens of Dianthæcia capsophila during the last few days; the bred specimens have not a trace of brown or yellow, they are pure black and white;

in fact they look nearer to D. conspersa than to D. carpophaga, of which some will have them to be the Irish representative. It seems to me that our English species ought to be arranged thus—conspersa, capsophila, carpophaga, capsincola, Cucubali; the two last only have the prolonged ovipositor."

The Secretary exhibited some white silky matter, resembling delicate tissue-paper, which had been sent to the Society by Mr. R. Thomson, of Alderney Road, Mile End, and described by him as having been "taken off a plank that formed part of a bin in which raw chichory had been stowed, apparently the deposit of insects, as numbers flew away when the goods were disturbed."

It was suggested by Mr. Stainton that the silken web had probably been made by the larvæ of Tinea granella, though he was not aware of an instance of that species having attacked chichory.

It was announced that Mr. B. T. Lowne (who was present as a visitor) was about to proceed to Bahia on an entomological excursion of some duration, and that Mr. S. Stevens would act as his agent in this country for the reception of his captures.

A communication from Dr. Dohrn and Dr. Behm, of Stettin, was read, stating that the Thirty-eighth Assemblage of German Naturalists and Physicians would be held at Stettin, from the 18th to the 24th of September, 1863, requesting the attendance of naturalists of other countries, and assuring the members of the Entomological Society of London that they would meet with a hearty welcome.

Professor Westwood entered into some details of the arrangements contemplated at Stettin for the reception of foreigners, and mentioned also that a meeting of Scandinavian naturalists would be held at Stockholm a few days before the Stettin meeting.

Papers read.

Mr. Pascoe read some "Notes on Australian Longicorn Beetles, with Descriptions of Sixty new Species."

Mr. Walker read two papers, entitled "Descriptions of some new Ægeriidæ" and "Descriptions of some new Sphingidæ."

Sale of the Society's Collection of Insects.

It was announced that the sale of the Society's Cabinets and Collections of Insects (except the type-specimens, part of which had been presented, and part sold, to the British Museum) would take place on Wednesday, the 8th of July.

New Part of the 'Transactions.'

A new part of the 'Transactions' (Entom. Trans. Third Series, Vol. i. Part 6), being the second quarterly Part for 1863, was on the table.

Entomology and the British Museum.

The chair having been vacated by the President, and taken by Mr. Pascoe, V.P.:

Professor Westwood rose to call the attention of the Meeting to the threatened appointment of a successor to Mr. Adam White at the British Museum. After referring to the circumstances under which the vacancy at the Museum had arisen, and the large additions to the entomological collections which had recently been made, the Professor insisted that a good staff of practical entomologists was requisite to keep the collections in proper order and continue the work of classification which had been so successfully begun. The two entomologists upon whom this task had devolved were Mr. Frederick Smith and Mr. Adam White: the latter was removed, so that Mr.

Smith remained alone. To fill the post vacated by Mr. White there were numerous candidates, including several good working entomologists who were in every respect eligible. It would naturally be supposed that some one of these competent persons would have been selected to supply Mr. White's place and carry on his work, but so far from this natural supposition being likely to prove correct, the facts were, that during the ill-health and consequent absence for several months of the Principal Librarian, an officer whose sway did not appear to be limited to the Library, but to extend over all the departments of the Museum, no appointment at all was made, and now that that functionary had returned there had been nominated (though fortunately not yet appointed) to the vacancy a gentleman whose previous employment had been that of a transcriber in the Book Department, who was entirely ignorant of Entomology, and did not know a butterfly from a moth or a beetle from a bug. Professor Westwood thought this was a matter which concerned the Society, and he asked its aid to assist in preventing, if possible, so injudicious a nomination from being perfected into an appointment. After a commendatory allusion to the temporary resignation of the chair by the President, lest his personal interest in the question and his position at the Museum might seem in any way to have been made to influence or interfere with the independent judgment of the Meeting, the Professor concluded by proposing the following Resolution :—

"Considering the state of the Entomological Collection in the British Museum, and the vast accessions, still unarranged, which it has recently received, and which render it the most valuable collection in the world : considering, also, that the proper classification of that collection requires the services of more than one person skilled in the Science of Entomology—

"Resolved, that the nomination, in the place of Mr. Adam White, of a gentleman previously employed as a transcriber in the Printed Book Department of the Museum, and entirely unknown as an entomologist, cannot but prove a great detriment to the progress of the classification of the collection, and is virtually a waste of the public money. Such nomination is the more objectionable as several competent entomologists were candidates for the post."

The Resolution was seconded by Mr. Stainton ; and after much consideration and a long conversation, in which Professor Westwood, Dr. Baly, Mr. A. R. Wallace and others took part, the same was put to the meeting and was carried *nem. con.*

Professor Westwood moved "That a copy of the above Resolution be sent to the Trustees of the British Museum, to the Principal Librarian, and also to J. Aspinall Turner, Esq., M.P."

This was seconded by Mr. S. Stevens, and carried unanimously.—*J. W. D.*

Pallas' Sand Grouse in Norfolk and Suffolk.

By Henry Stevenson, Esq.

THE general interest which has been excited, during the last two months, by the appearance in such large numbers on our coast of these rare wanderers from the steppes of Tartary, has not rendered the task of collecting particulars of the specimens obtained less difficult; but on the contrary, every one having something to say respecting them, the tangled skein of evidence has required much careful investigation to prevent confusion in numbers, dates and localities. Thanks to the kindness of various correspondents—amongst whom my thanks are especially due to Captain Longe, of Yarmouth; Mr. Rising, of Horsey; Mr. Southwell, of Fakenham; Mr. Dix, of Ipswich; and Mr. Spalding, of Westleton—I am enabled to give the fullest particulars respecting no less than sixty-three specimens obtained in Norfolk and Suffolk; though at the same time I doubt not that some few others may have passed unnoticed, either not being preserved when shot, from ignorance of their value, or kept "quiet" in the hands of certain individuals, whose title to possession, or method of procuring them, may be equally questionable. It is most probable that the birds which have appeared so simultaneously on our eastern coast are members of one large flock, which has become scattered by repeated alarms. I shall therefore arrange my notes of the various individuals killed up to the present time according to the dates of their capture, in whatever county procured.

May 23.—One female found dead on Yarmouth beach. "The first intimation," writes Captain Longe, "of the Syrrhaptes paradoxus in this county was, as is often the case, totally unheeded. On the 23rd of May, Mr. Youell, the well-known nursery gardener, was walking by the sea near the North Battery, when he saw a small bird washed up and down in the foam: its beautiful markings attracted his attention, and he brought it home, but, being very much knocked about and slightly decomposed, he did not think it worth keeping. One of his men, however, by name Hunt, skinned it and preserved the skin, and it proved to be a female. There were no signs of shot-marks about it, and I do not doubt it dropped in the sea from exhaustion, and was washed ashore by the tide." It is particularly worthy of note that this bird was first seen the day following the capture of the pair recorded in the 'Times' by Mr. E. J. Schollick, which were killed in the Isle of Walney on the 22nd of May,—the earliest record, on this occasion, of the appearance of these birds in England. This one example, so accidentally observed, marks in all probability the date of arrival, on the Norfolk coast, of the large numbers subsequently met with, and which no doubt remained unnoticed, and therefore undisturbed, till the first week in June.

May 28.—A female at Thorpe, near Aldborough. A notice of this, the first specimen procured in Suffolk, was inserted by Mr. Hele in the 'Field' of June 13th.

June 4.—One male and three females killed at Waxham, Norfolk. Just twelve days from the appearance of the first specimen, no others apparently having been seen in the meantime, a small flock of eight or nine birds were found by the Rev. Mr. Wheeler and Mr. Gibbs, of Waxham, feeding in a grass-field near that village, which is situated on the coast about fourteen miles from Yarmouth. Four birds were shot, of which two females were presented to the Norwich Museum by Mr. Wheeler. These birds, singularly enough, are the only females out of all that I have examined that exhibit any indication of a band across the breast as in the males. In one it is very distinct; in the other, visible on each side close to the wings, and indistinctly traceable across the chest. This may probably denote the fully adult plumage of the female, as the ovaries in each case were largely developed, some eggs being about the size of a common hemp-seed.

June 5 and 6.—Two males and one female killed at Walberswick, near Southwold, Suffolk. The first of these birds (female), as I learn from Mr. Spalding, of Westleton, was shot from a small flock by a labouring man on the shingle close by the sea. A male winged at the same time was afterwards caught; and the third was secured by the gamekeeper to Sir J. Blois. Mr. Spalding also adds, "I took my gun, and had a walk over the extensive heath of Walberswick, when I saw a covey of about eighteen birds. They flew exactly like the golden plover, but I had no chance of a shot at them; another parcel contained seven, and another three birds.

June 6.—A male taken alive at Elveden, near Thetford, Suffolk. Of the capture of this bird on the Elveden estate Mr. Alfred Newton has sent me the following notes: it is also the only specimen I have yet heard of as procured so far inland in either Norfolk or Suffolk, Elveden being situate on the borders of both counties:—"It was brought to me," says Mr. Newton, "by a stable lad, who found it as he was exercising a horse in the morning. He thought it had been drenched by the previous night's rain, and so rendered incapable of flight. But on inquiry I found that a strange bird had been shot at and hit two days before, by a man in the employ of our clergyman; and this was doubtless the cause of its being unable to get away from the lad. From another source I learn that several sand grouse, or at least unknown birds, were seen, and some of them killed, about the same time on Wangford Warren. The tenant sent them at once to London, saying nothing about them to any one. These last were probably some of those that found their way to the shop-boards of Mr. Baily and the other London poulterers." This bird, being only slightly injured, was sent by Mr. Newton to the Zoological Gardens in London, to be turned off with others of its species, obtained some time since from China.

June 6.—One male shot on the beach at Yarmouth. This bird, a fine old male, now in the possession of Mr. J. H. Gurney, was killed by a man named Nudd, who was working on the north beach at Yarmouth, and observed nine birds together, which he mistook for plovers.

June 8.—A female on Breydon wall, near Yarmouth. "Two sergeants of the Militia Artillery," writes Captain Longe, "were shooting on Breydon, when they marked down about nine gray plovers (*Squatarola cinerea*), which alighted on the stone wall of the embankment. It was nearly nine o'clock in the evening, and Sergeant Crowther got on to the bank and managed to get a shot into them; he noticed one bird larger than the rest, and singularly enough this bird was the only one that fell to the gun. He brought it to me, and it proved to be a female sand grouse in very good condition. It did not, however, possess the long tail-feathers which all the other specimens I have seen have done."

June 10 and 11.—Eighteen birds, male and female, shot on Horsey beach, near Yarmouth. Of this, the largest flock observed in our eastern counties, Mr. Rising has kindly supplied me with the following particulars: —"On the 9th, while out walking on the beach here, I saw a large flock of birds, more than forty, which I mistook for golden plovers. They rose within fifty yards, and flew seawards, returning back over my head at about twenty yards high, quietly calling out 'click, click,' and returned to the spot whence they rose. I felt strongly impressed from their cry that they were a kind I had never seen before, although I had not noticed then their peculiar tail-feathers. On my way home the birds again rose, took a quiet circuit round, making the same easy cry, and returned to the same spot." On the following morning Mr. Rising went over to Yarmouth, where he heard of the sand grouse just killed there, and felt sure that the Horsey birds were of the same kind. Later in the day his son, Captain Rising, went down to the beach, where he found the covey in the same locality, and succeeded in bagging ten, of which six fell to his second barrel, and two other winged birds were afterwards found. On the same evening three more were secured, and three on the following morning (11th), making in all eighteen specimens, males and females in nearly equal numbers. Of this fine series all but four or five passed into the hands of a game-dealer at Yarmouth, by whom they were sold to various collectors, both here and at a distance, which accounts for the different notices of these Horsey birds which have appeared in the 'Times' and 'Field;' and the female noticed in the latter journal (June 13th), by Mr. Ward, as "killed on a sand hill a few miles from Yarmouth," is, I believe, one of them.

June 10 and 15.—Six brace, males and females, all shot at Holme, near Hunstanton, Norfolk. The first pair of these birds were noticed by Mr. M. Dodman, in the 'Field' (June 13th), as killed at Titchwell; but they were actually shot on the sand hills at Holme, an adjoining village. In a subsequent letter to Mr. Southwell, of Fakenham, Mr. Dodman says:—"Two brace more have since come into my possession, one of which I gave to a friend (sent to Norwich on the 12th for preservation); the other pair were too much shot for stuffing. There have been as many as six brace or six brace and a half shot at the same time and at the same spot. A pair are gone to the Wisbech Museum, and the others have passed into private hands. A pair were also seen on the sand hills at Brancaster on Sunday last (June 7th)." In the 'Field' of June 27th Mr. Dodman states, "A covey of sixteen were seen here (Titchwell) on Sunday," the 21st instant; and those referred to by Mr. F. Tearle (Hunstanton), in the 'Field' of July 4th, are evidently some of the specimens above described.

June 11 and 13.—Four females and one male killed at Thorpe, near Alborough, Suffolk. Mr. Hele, of Alborough, has noticed these, as well as the first Suffolk bird, in the 'Field' (June 13th and 20th); and Mr. Dix, of Ipswich, has also sent me further particulars, a pair of them having come into his possession. As many as fifteen or sixteen appear to have been seen in this locality up to the 13th of June.

June 17.—One male killed at Winterton, Norfolk. This bird is no doubt one of the Horsey covey, which, I had previously heard, had been seen since the 10th on Winterton Warren, situated close to the sea between Horsey and Yarmouth, and where, I believe, some few of these birds still remain.

June 20. One female from Yarmouth, in the possession of Mr. C. Newcome, of Feltwell.

June 22?—One male shot at Morston, near Blakeney. Of this bird Mr. Woods, of Morston, has kindly sent me the following particulars:—"I shot a sand grouse in one of my ploughed fields, about three weeks since. There were nine when I first saw them. I thought from their habits and appearance they were golden plovers in their summer plumage. When I saw the description in the papers of the sand grouse, I took my gun to look for these strange birds, but found the covey had dwindled to three, out of which I was lucky enough to shoot one, which is now being stuffed at Mr. Alcock's of Blakeney."

June 24.—One male killed at Waxham, where four of the earlier specimens were obtained. Mr. Harvey, of Waxham, who shot it himself, says, "This bird was killed in a turnip field near the sea-banks; another was seen the same day about the same place, supposed to be a hen. On Friday (26th), about 10 A.M., a flock of from twelve to fifteen flew over the sea-banks in a south-east direction. They fly in the same order as wild-fowl, and frequently utter a peculiar clicking noise."

June 24.—One female at Kessingland, Suffolk. This bird was sent up to Norwich to be stuffed for Mr. Crowfoot, of Kessingland, who in answer to my inquiries informs me that it was killed on that part of the coast, by a labouring man, out of a flock of twelve or fourteen which had frequented Mr. Bean's farm, near the cliff, for a fortnight previously. About a week since a flock of fifty or sixty strange birds were seen flying to the southward in one flock, by some men ploughing near the marshes adjacent to the sea.

June 25.—A male killed somewhere in Suffolk, on the authority of Mr. Spalding, of Westleton.

June 26.—Four females from Blakeney, Norfolk. These birds were sent up to Norwich to be stuffed on the 27th, and on examination I found the ovaries, in all but one, more developed than in any previous specimens—some eggs as large as hemp-seeds; and several of the quill-feathers in the wings had been recently moulted.

June ?—In the 'Field' of June 27th, Mr. Ward, taxidermist, of Vere Street, London, speaks of a female from Norfolk which had just come into his hands, and adds that this bird appeared to have laid "all its eggs but two, and these were about the size of hazel-nuts." This announcement seems rather extraordinary, since none of those examined by myself, or by any one of whom I have made inquiries, have contained eggs larger than hemp-seeds; others not half the size, and the main cluster extremely minute. In one bird I counted between fifty and sixty eggs of all sizes, and yet these were not all the ovaries contained; the largest, and therefore those which would form the first sittings, numbering about six or eight. Surely, then, we cannot imagine that this one female had already been so robbed as to have exhausted all her store but two. May we not rather suppose that in some way or other a mistake has arisen, and, the skin having been removed from the carcase, the testes of an adult male have been taken for the two last eggs of an incubating female? as these parts in some old males have been found nearly half an inch in diameter, and, as usual, ovate in form and pure white.

July 1.—One female at Holme, near Hunstanton. This bird, which also came into the possession of Mr. Dodman, of Titchwell, was, as Mr. Southwell informs me, found dead upon the beach at Holme. "Its death was caused by a shot wound. The contents of crop and gizzard were precisely the same as in others from the same locality; and judging from its full and healthy appearance, its food must have agreed well with it." Mr. Southwell gives the weight of the first pair killed in this locality as 9¾ ounces each, male and female. I have no doubt whatever that while staying myself at Hunstanton, in the beginning of June, I saw more than once a small flight of these birds on the beach at Holme. On one occasion I tried to get near about four or five birds which at a distance I took for gray plovers. They rose wild, however, and came over my head out of shot; and their flight and cry—the latter quite new to me—made me wonder at the time if they could be anything I had ever met with before.

July 8.—Male and female from Yarmouth. These birds, which are in the possession of Mr. Owles, of Yarmouth, are supposed to have been killed near Caister. They were sent up to Norwich on the 9th for preservation, when I examined them in the flesh. They were neither of them in such good condition as most of the earlier specimens, the keel of the breast-bone being sharper to the touch; nor were they so fat internally, though perfectly healthy. The colours of the plumage, in both male and female, looked dull, and exhibited no signs of moulting. In the former the tail-feathers were half an inch shorter than usual; but both the tail and wings in the latter were an average length. The gizzards presented the same class of small seeds as in others, with white flinty particles, but these both smaller and less numerous than in many I have dissected. The female, probably a young bird, contained a large cluster of very small eggs, none larger than a common rape-seed. The male was evidently an adult specimen.

July 9.—Male and female. I am not able to state the exact locality where this pair were shot, but I have reason to believe it was on the Norfolk coast. Neither the crops nor gizzards presented any variation from former specimens.

With the exception only of the Elveden specimen, these birds have been found in the above-mentioned counties, either close to the sea (on the sand hills and shingle) or in the immediate vicinity, feeding in grass-fields or on open waste lands. In all cases they have been in good condition, the internal parts exhibiting signs of perfect health, and the crops in most cases filled with green food; some few, however, have had empty crops, but their gizzards (extremely muscular) filled with the *débris* of seeds and small fragments of flint. No trace of animal or insect food has been found in any of them, either in our eastern counties or in other parts of England. Of the first female killed at Yarmouth, Captain Longe says, "The gizzard contained an enormous quantity of small stones and sand (some of the stones were nearly twice the size of mustard-seeds), and weighed three-quarters of a dram." This I have found the case in most of them myself, but in some much more sand than flints. The contents of the crops (in one case filling two table-spoons) are various, consisting, in the opinion of several local botanists, chiefly of small yellow grass-seeds, mixed with the seeds and cases of Medicago lupulina (black medick or nonsuch), Carex (sedge), Rumex (dock), Stellaria and Cerastium (chickweed), and in some instances small sprigs of Sedum acre (biting stonecrop), so abundant on the sand hills of our eastern coast. Those taken from one of the Yarmouth birds, being of six different kinds, have been sown in pots under the care of Mr. Youell, at his nursery-grounds, and will thus, I hope, decide satisfactorily the plants to which they belong. Mr. Southwell, of Fakenham, who has most kindly placed his own notes on this species at my disposal, has taken great pains to ascertain accurately the plants on which such birds as have come under his own personal observation had been feeding. The following statement was received by Mr. Southwell from no less an authority than Mr. C. C. Babington, of Cambridge, after an examination of the different seeds from the crop of one of the Holme specimens:—"Most are the fruit and seeds of Arenaria, or rather Lepigonum rubrum, numbered 1 on the paper; 2 is a seed of Polygonum; 3, the tip of a moss; 4, seeds of another kind of Polygonum (they must have been some time in the bird's crop, for they have commenced growing); 5 appear to be fruiting flowers of Poa; 6, I fancy belong to Sagina or Arenaria, but I have not succeeded in naming them to my own satisfaction. All these names are of course quite open to alteration, but I quite think that they are correct." Besides the above, Mr. Southwell has also distinguished the seeds of Lepigonum marinum, of which there appear to have been none in the crop submitted to Mr. Babington; and in a letter to myself he adds, "I think we may conclude that their food in this country consists entirely of the seeds of plants proper to the sandy coast upon which they were found. The fact of the seeds being all those of British plants probably shows them to have been on the coast some days." Mr. Alfred Newton, to whom the carcases of two of the Holme specimens were sent by Mr. Southwell for the purpose of dissection, suggested a careful examination of the small flinty substances found so abundantly in the gizzards, shrewdly suggesting that some mineralogist might recognize in them "fragments washed down into the Kirghish Steppes from the Altai mountains; or the birds might have renewed their stock of grindstones as they crossed the Ural." Acting upon this hint, Mr. Southwell submitted some of them to a geological friend, who writes as follows:—"As to the stones found in the gizzard, I do not think they were got on the Norfolk coast. I doubt whether the sand there would afford such large grains. They may have been picked up on their native steppes, and probably the same stones may remain in the gizzard for an indefinite length of time. The stones, so far as one can see, seem to be fragments of quartz and feldspar, and are therefore probably granitic. I have shown them to one of our best geologists, an F.G.S., who concurs with me, and thinks that nothing decisive can be predicated from them. They could all be easily matched in England." I may here add that the later specimens dissected by myself have had fewer flinty particles in their gizzards, and those much smaller in size and more mixed with sand. In the early examples the size and peculiarly angular appearance of these white fragments would attract the notice of any one accustomed to examine the internal economy of granivorous birds; and as it is generally understood that such stones are retained in the gizzard so long as their triturating powers remain unimpaired by the action of the stomach, it is most likely that on their first arrival our Tartar visitants contained their native grindstones.

Having examined a series of just five-and-twenty, consisting of ten males and fifteen females, I have been struck with the general similarity of the specimens according to sex. The less matured males differ only from those more adult (judging from the largely developed state of the testes) in having the ground colour of the plumage somewhat duller, and their darker markings less clearly defined; but the extremely dark tints of some old males, especially in the deep gray of the breast and more clouded appearance of the wing-coverts, are, I imagine, attributable to old and somewhat soiled feathers, which in a few weeks would have been replaced by others. In one or two fine old males very recently killed (for the brighter portion of the plumage soon fades in the stuffed specimens) the reddish orange of the head and neck, the delicate pencil-markings across the breast, the rich buffy colouring of the wing-coverts, bordered by a reddish bar above the secondary quills, and the broad abdominal band of blackish brown mingled with buff, were all extremely vivid, as also the bars and spots on the back and wings; but I did not find that such specimens had in all cases the longest tail- or wing-feathers, which are doubtless much subject to accident. Amongst the females the same degree of difference exists, the young birds having a more mottled appearance on the upper parts, the kestrel-like bars on the back and wings being less clear. In old females the black ring round the throat and the yellow tints of the neck are extremely bright. In two only, as before observed, have I seen the slightest trace of the pencilled lines across the breast, so marked a feature in all males. These probably are very old hens, but they are not more brilliant in plumage than others, and the one with the pectoral band most distinct has the gular ring very faint, the yellow tints less vivid, and the first quill of the wings scarcely elongated at all. In some examples the quill-feathers have been recently moulted, as in the last four females from Sherringham; and Mr. Dix informs me that in two he received from Horsey he found the secondaries and tail-feathers full of blood and about three-parts developed, and some of the back feathers were brighter and evidently new. The following are the variations in length of the tail- and wing-feathers in both sexes, as far as I have been able to take them; but the difference in length of the first primary quill is owing more to the size of the bird (the wing itself being larger or smaller) than to the elongation of the filaments; thus in one female the wing from the carpal joint measured nine inches, yet the primary shaft projected but very little. The females have the same bright reddish hue above the secondary quills as in the males, and the abdominal band is in some even deeper in colour and less mixed with buff. All but one female I have seen have had elongated tail-feathers, and in this case they had been shot away:—

Tail-feathers in males, 6½, 7, to 7½ inches.
First primary of wing, measured from the carpal joint, 8½, 9, 9⅜, 9½, to 10 inches.
Tail-feathers in females, 3½, 4, 4¾, 5, 5½, to 6 inches.
Wings measured as above, 8, 8⅜, 8⅝, to 9 inches.

The above list comprises no less than sixty-three specimens, killed in the counties of Norfolk and Suffolk, *viz.*:—

Norfolk,	51	Males,	23
		Females,	28
Suffolk,	12	Males,	5
		Females,	7
	—		—
	63		63

Tastes seem to vary much respecting the edible qualities of these strange birds, which, as far as my own experience goes, are in this respect as much entitled to their specific name of paradoxus as for any of their external peculiarities. Served up as "a delicious salmi" at the dinner of the Acclimatisation Society, they are said to have been pronounced "admirable"; but here at least they were tried under the most favourable circumstances, being cooked to perfection by a master of the culinary art. Without all these advantages, and with the great drawback of wanting their natural skins, the first brace I tried were undoubtedly dry eating and somewhat tasteless, but presented, from the great depth of the sternum, a "breast" fine at least in quantity if not in quality. On the next occasion I had them baked, with the addition of a beef-steak to assist in preserving their natural juices, and found them much more tender and palatable, the flesh suggesting the flavour of many things, though scarcely one in particular. I should say, however, that they resemble the French partridge as much as any other game bird, as they want the pungency of the quail, to which they have been likened by some who have eaten them. Their only resemblance to grouse consists in the two colours of the flesh, the outer portion being very dark, and that nearest to the bone white. It must be remembered, however, that these birds are not "in season:" what they might become in autumn, after a corn diet, with their game flavour excited by "keeping" (a thing impossible this hot weather), is a point which perhaps the Acclimatisation Society will decide for us at some future day.

HENRY STEVENSON.

Snowy Owl (Strix nyctea).—Mr. Saxby, in his notes on this owl (Zool. 8635) says, "These hills [Balta] are strewn with large gray stones, intermixed with a few long-shaped white ones; the bird is exceedingly difficult to discover while resting in such situations, so closely assimilating as it does in colour with the surrounding stones." There is evident design in this; an instinctive knowledge that the stone, wood, soil, &c., assimilating with the plumage, secures it from observation. This was pointed out in my Canada notes (Zool. 6702), showing how one managed to escape notice, though perched within a few yards of me. Many birds are endowed with this faculty, the rock pigeon, or sand grouse, of Southern India, for instance; see my note at Zool. 5748, where, in remarking on the plumage, it is said—"harmonizing well with the arid, sandy and rocky character of the desert-like tracts where alone they are to be met with, and where they lie crouched and concealed amidst the chaotic masses of granite, as well as rocks and stones with which these vast and boundless plains are strewn and dotted," &c. I have only to remark that what has been more recently noticed by Mr. Saxby, in Shetland, tends to confirm my observations on the snowy owl. I need not quote them, as they can be referred to if required, but the following passage occurs: "I was surprised and somewhat startled at seeing one of these noble-looking birds suddenly rise from off the snake-fence within a few yards of me, where it had sat secure and unobserved, its plumage assimilating with the bleached and weather-beaten palings." There are two ways of accounting for its having permitted this near approach; the owl was either sleeping or resting in fancied security; but if diurnal in habit it could hardly at noonday have been so soporiferous as not to have heard me trudging incautiously along through the snow. Its being immediately attacked by crows (as recorded at the time) tends to show that, like other owls, it is a nocturnal bird, for if habitually on the wing by day it would not be so molested and persecuted. Besides, neither in plumage nor organization does it differ from other owls. Its eyes, too, are those of a nocturnal bird, and ill adapted for sustaining the full glare of a bright Canadian sun, or the reflected rays from fields of snow. It probably preys by night on the hare, which is of the size of a rabbit, and weighs three and a half pounds. Their being able to swallow a rabbit entire is a wonderful proof of the expansibility of the gullet and stomach, but the swallowing of an auk or two by the glaucous gull, as recorded by Dr. Richardson, is not much less so. Whether the stomach of the owl be full or empty makes all the difference, and would account for the apparent discrepancy of authors. Audubon, after remarking that the "stomach is capable of great extension," informs his readers that it can swallow a rat—not entire—but "in pieces of considerable size, the head and tail almost entire."—*Henry Hadfield; Ventnor, Isle of Wight, July* 4, 1863.

Two Wheatears Nests together.—At the edge of a deep burn upon the hill-side, a long strip of turf has given way, and resting against the steep bank has thus formed a small kind of tunnel, about a yard in length. So tempting a situation for a nest attracted the notice of two pairs of wheatears, who, instead of settling the question of ownership "sparrow-fashion," peaceably built their nests side by side within six inches of each other. Each nest contained six eggs, all of which were hatched within the same week; and in due time both broods were fledged. Although one brood left the nest some days earlier than the other, it remained in the immediate neighbourhood long afterwards, accompanied by the parents, who fed them industriously for at least twenty hours out of the twenty-four. The younger brood soon rejoined its former neighbours, and at about eleven o'clock every night the whole party, numbering sixteen individuals, retired to crevices beneath large stones,—at least, I suppose so, for although I was never able to discover the young birds in their retreat, the slightest noise was sufficient to call forth the old ones. But after this had occurred three or four times they were never to be taken by surprise, and were always to be seen flitting restlessly about as soon as I approached sufficiently near to distinguish them. Both ends of the tunnel were used for the purposes of entrance and exit, but I had no means of ascertaining whether each pair of birds kept to their own nest. Wheatears are very abundant here. There is scarcely a wall in this neighbourhood which has not to my own knowledge contained one nest or more. It is remarkable that nearly one-fourth of the whole number of the eggs of this species which I have seen this season have been of the spotted variety; this is an unusually high average.—*Henry L. Saxby; Baltasound, Shetland, July* 29, 1863.

The Chaffinch and the Gooseberry Grub.—I have read with interest Mr. Ranson's remarks at Zool. 8680. I am happy to add another bird to the list of those few known to be inimical to that most noxious pest the larva of Nematus ventricosus. I have a few gooseberry bushes under my study window which are and have been swarming with it. A week or two since I was delighted to see an old cock chaffinch busily engaged in collecting them in his bill, and carrying them off in bundles to feed his young ones in an adjoining tree. My friend Mr. Doubleday had previously mentioned this fact to me, but I had never been fortunate enough to witness it with my own eyes.—*H. Harpur Crewe; Rectory, Drayton-Beauchamp, Tring, August* 5, 1863.

Frequent Occurrence of the Eggs and Young of the Cuckoo in Nests of the Rock Pipit.—On the 7th inst., while hunting for nests over some cliffs near here, I observed a rock pipit in the act of leaving her nest, which I found to be occupied by a lusty young cuckoo. I identify the nest by a good view of the bird and by an egg which I found just outside of it, excluded, I presume, by the broad back of the intruder. This is the fourth nest I have found of this species in two seasons, *viz.*, the present one and that of 1861, each containing either an egg or a young one of the "vagrant" cuckoo as Gilbert White well describes it.—*C. E. Seaman, Northwood, Isle of Wight, July* 21, 1863.

Cuckoo's Egg in a Linnet's Nest.—I do not remember ever having seen an instance of a cuckoo's egg being found in a linnet's nest recorded in any book or periodical. I found one in June, 1857, the linnet sitting on it and five of her own eggs. The nest was in a close furze bush, within fifty yards of a boy's cricket ground near this place, and as there was little chance of the foster bird being permitted to hatch I took the egg and preserved it. It is a large one and a strange contrast in size with the eggs by which it was surrounded.—*Charles Bridger; Witley, Surrey, July* 7, 1863.

Nests of the Creeper.—Two nests of the creeper have come under my notice this season, both mainly constructed of bark, and both unusually placed. One occupied a small hole in a dilapidated out-building belonging to an uninhabited house, and this I was not able to examine for some time, until the young ones had taken leave of their birthplace, when I found it unfit to keep. The other was in the fork of a large juniper tree, a remarkably pretty nest, built, I believe, chiefly of the bark of the juniper, and lined with feathers. I have preserved it.—*Id.*

Nest of the Jay built in Common Ling.—In one of my evening walks over Witley Common, in May last, a pair of jays and some other birds uttering cries of distress drew my attention to a dense mass of young Scotch fir trees, in the midst of which I found a jay's nest, in what seemed to me a very unusual place, *viz.*, in a fine plant of common ling, and within a foot of the ground. There was one young one in the nest alive and one on the ground dead. An enemy, perhaps a weazel, had evidently found the nest and abstracted one of the young ones,—hence the trouble of the parent birds. —*Id.*

Variety of Hooded Crow.—Yesterday, as I was walking along the edge of a low sea-cliff in the island of Yell, a pair of hooded crows flew out from their nest, and one of them, which appeared to be the male, had the whole of the wing-coverts perfectly white. I was unable to obtain a view of the nestlings.—*Henry L. Saxby; Baltasound, Shetland, July* 5, 1863.

Garrulous Roller in Suffolk.—A very perfect and handsome specimen of this bird was killed by Mr. R. Pratt in this neighbourhood, on Tuesday, June 23rd. It has been sent to Mr. J. Cooper, the taxidermist, of 28, Radnor Street, St. Luke's, for preservation, where it can be seen, together with some very well mounted specimens of fish, &c. It is well worth any naturalist's inspection.—*N. Fenwick Hele; Aldeburgh, Suffolk, July* 19, 1863.

Note on Pallas' Sand Grouse.—Observing letters in your columns ('Times') relating to the recent occurrence of Pallas' three-toed sand grouse in this country, I think it may not be uninteresting to your readers to learn that this is not the first occasion on which this curious inhabitant of the Kirghiz steppes of Tartary has paid us a visit. In the summer of 1859 a small flock of these birds traversed England from west to east. One of them was shot in the parish of Walpole St. Peter's, in Norfolk, in the early part of July of that year, and a second near Tremadoc, in Wales, on the 9th of the same month. About the same time, as we learn from the scientific journals of the Continent, birds of the same species were obtained from Hobro, in Jutland, and on the dunes of Holland, near Leyden, where their presence was quite as unexpected (and, I may add, the reception these unfortunate pilgrims met with as little hospitable) as it appears to have been in England. A detailed record of all these occurrences, together with a full description and coloured figure of this bird, is given in the second volume of the Natural-History periodical called the 'Ibis,' to which I beg to refer such of your readers as may wish to know further particulars. I may remark that there are living specimens of this sand grouse in the Zoological Society's aviary. These birds were obtained by officers and other members of the recent British expedition to Pekin (where, in winter time, they are sold in the market for food), and brought to this country in 1861.—*P. L. Sclater; Zoological Society of London*, 11, *Hanover Square, May* 28, 1863.—'*Times.*'

Pallas' Sand Grouse in Devonshire.—I last week received a pair of the sand grouse which were shot from a flock of thirteen birds, by a friend of mine on the sands at Slapton Ley, near this place. They were in good condition, and had been feeding on a sort of grass seed. These birds seem to be larger than the specimens mentioned by Sir William Jardine, their length being nine and eleven inches: my specimens are thirteen inches, the old male having the pointed feathers in the tail four inches longer, which makes nearly seventeen inches; weight, seven and a half ounces.—*Henry Nicholls, jun.; Kingsbridge, South Devon.*—'*Field' of July* 4, 1863.

Pallas' Sand Grouse in Kent.—I have two specimens of this rare bird (male and female) shot, on the 7th of June, at Elmley, Sheppey, from a covey of six, and to my knowledge four have been shot out of that number.—*E. Young; Sittingbourne, Kent, July* 1, 1863.

Pallas' Sand Grouse in Norfolk.—Several coveys of these rare and remarkable birds have made their appearance on this coast during the last six weeks. The first specimen was shot at Thorpe and brought to me. It proved to be an adult female, and contained upwards of a score immature eggs. Altogether seven birds have been shot, and I have secured a handsome pair, which I have stuffed and mounted. I planted the seed which I found in the crop, which has germinated and flowered, and proves itself to be the Trifolium minus. From further experience I find this constitutes the usual food of these birds, and a field which has been much frequented by the sand grouse, abounds with this plant. The coveys generally number from seven to twenty.—*N. Fenwick Hele; Aldeburgh, Suffolk, July* 19, 1863.

Sand Grouse: Correction of an Error.—The two birds mentioned by Mr. W. Liversedge (Zool. 8689) are now in my collection. They were killed, as stated, by Mr. W. Emmett, in a field in my brother's manor in the parish of Calverley. The name given by Mr. Liversedge is a mistake: they are not the pintailed sand grouse (*Pterocles setarius*) but Pallas' sand grouse (*Syrrhaptes paradoxus*). They are both in fine plumage, and exhibit the curious pin feathers in the tail in a marked degree.—*W. Christy Horsfall; Horsforth Low Hall, near Leeds.*

Pallas' Sand Grouse in Lincolnshire and Yorkshire.—In the early part of June I had a fine specimen of Pallas' sand grouse brought in to be preserved. It was shot out of a covey at Floatmanby near here. A fortnight after I had another sent in, which was shot from a brace by Admiral Mitford's gamekeeper. They were both males, and in fine condition. The plants enclosed are grown from seeds obtained from the first bird's crop: the seeds sent I took from the second bird. We have had a brace (male and female) presented to our museum, which were shot at Saltfleet, on the Lincolnshire Coast. I understand one person shot ten brace of these curious birds. *Alfred Roberts; King Street, Scarborough, July* 5, 1863.

[The seeds are of various kinds, already mentioned as occurring in the crops of these birds; the young plants are Chenopodium Bonus-Henricus and Stellaria media. Knowing how very commonly these two species occur in gardens without any intentional sowing, I should decline to express any decided opinion as to their seeds having been eaten by the sand grouse.—*Edward Newman*].

Pallas' Sand Grouse in Cambridgeshire.—In addition to the many localities in which this hitherto rare visitant has recently made its appearance, it has shown itself in considerable numbers in the eastern counties; a large flock settled in the neighbourhood of Cottenham, a village about eight miles from Cambridge, where they were constantly running as in search of food. Though they are remarkably shy, and fly with great swiftness, several specimens have been obtained. In dissecting some I found the crops full of a small black seed very much resembling the seed of the willow weed, which grows plentifully in this district: in a female I found several eggs the size of a large pea, and by the healthy appearance of the bird have no doubt they would breed in this country if unmolested.—*John Baker; Trumpington Street, Cambridge.*

Pallas' Sand Grouse in Cambridgeshire.—Several have been captured in this county during the last three weeks; four or five at Cottenham, one at Oakington, one at Swaffham Prior Lane, I don't know how many at Barrington, and I hear several around Royston. There was a flock at Cottenham—upwards of forty—but the last time seen there they had dwindled down to five. As Oakington is only about three miles west or north-west of Cottenham, and Swaffham much about the same distance east of Cottenham, it is not impossible that those captured in these three parishes were of the same flock. They have appeared also at Little Wilbraham, but no specimens have been taken there that I have heard of. I have three in my possession—a male and female shot at Cottenham, the former only winged and now alive, and a male shot at Swaffham Prior. I hear the birdstuffer at Royston has several in his possession, but whether his own property or not I do not know.—*Kindly communicated by Mr. F. Bond.*

The Sand Grouse in Cambridgeshire.—The sand grouse made their appearance in this county about the third week in June, and, singular to say, only two spots appeared to prove attractive, those places being Royston Heath (by-the-by in days past rather a noted place or resort of departed rarities) and Cottenham and its immediate neighbourhood. I am not cognizant of a single specimen having been seen or shot except in the vicinity of these two places. These birds always appeared to prefer fallow lands to those in cultivation, and their food in every case, as far as I could discover, consisted of the seeds of (what we call here) the lamb's tongue, and, of many I had the gratification of dissecting, the crops contained some few leaves of that plant. Each flock consisted of between thirty and forty. While feeding they kept in a straight line, running with great ease and grace, keeping nearly close to the ground; the wings were slightly apart from the body; the tail carried in a horizontal line with the body, and closed, the two long or elongated feathers forming in appearance one pointed feather; the feet were scarcely perceptible, and while in the act of running were kept in rapid motion; in short, their actions upon the ground reminded one much of rats. They have a singular trait of elevating both wings and bringing them up over the back, the tips of each quite touching. I have observed several in each flock practise this peculiar action; their body is carried lower in front than behind, and the neck very short. When flushed or disturbed they rise rather high, and at once take a straight and rapid flight, the while repeating a plaintive whistle, if once heard not easily mistaken. I would here briefly endeavour to describe the distinctive features presented by each sex. The male is in his general appearance a finer-looking bird; his head on each side is marked with much brighter ochre-yellow; the crown of head without spots; a large patch of an oval form upon the pinions of his wings are also quite destitute of spots, being plain stone-colour, but the feature which at a glance pronounces him a male is a crescent-shaped band of scale-like feathers which encircles the breast of the male bird, these feathers being edged with buff; and the horse-shoe markings upon the lower portions of its body, instead of being darkish brown, as in the female, are black, some of them being edged with buff. The two outer or greater quill-feathers, as are also the two middle tail-feathers, are much more elongated than those in the opposite sex. The spots and markings are less dense, and more thinly dispersed over the entire plumage than in the hen bird. The bluish white bare space round each eye is deeper in the male. The eyes are very dark hazel, approaching to black. The beak is of a beautiful bluish pearl gray, slightly larger than that of the female. The female is at once known by having a ring of darkish feathers running round the under part of its throat, and by the absence of the patch of plain feathers upon each wing, the horse-shoe upon the lower part being dark chesnut in place of black, as in the male, and its general darker markings and shortness of elongated feathers. Many of the specimens differ materially from each other, some being very much more thickly and more closely spotted than others. The annexed is a list of the occurrences:—Two females shot at Cottenham, on the 30th of June. Male and female captured at Oakington, some time in the end of June or early in July. Male and female shot at Cottenham, in the early part of July, by Mr. A. Cross, farmer. Mr. Norman, taxidermist, of Royston, very obligingly informed me that no fewer than nine had been shot upon Royston Heath and vicinity, and had been confided to his care for preservation. I believe these were all females. The last occurrence I shall notice, but certainly not the least, is that of three taken alive at Cottenham. One, the male, is now alive and doing well, in the possession of Mr. F. Barlow, a very enthusiastic ornithologist of this town, who, with his well-known kindness, in the most courteous manner has offered me every facility of visiting his museum and watching this most interesting little stranger. At some future time I may send to the 'Zoologist' some further notes thereon.—*S. P. Saville; Dover House, Cambridge, August* 11, 1863.

Pallas' Sand Grouse in Lancashire, Lincolnshire, Yorkshire and Cambridgeshire.—In addition to the captures of this grouse recorded in the August number of the 'Zoologist' the following have come under my observation. One shot near Penrith, several near Lancaster on Morecambe Bay, one at Whitby, one at Bridlington, thirteen on the north-east coast of Lincolnshire, near Louth and Alford, one or two near Peterborough, eight near Cambridge, and five specimens were offered for sale to a game dealer in York and refused by him, but when shot or what became of them I have not been able to ascertain. As I have not seen any in the flesh I can add but little information to what is already recorded. I believe the numbers of the sexes have been nearly equal, though not always equally distributed. The crops of several that were examined contained small black seeds, and the ovaries of the females contained eggs in various stages of development. All were obtained from the last week in May to the end of June.—*T. H. Allis; York, August* 5, 1863.

Pallas' Sand Grouse in the East Riding of Yorkshire.—I added to my collection the other day a fine male specimen of Pallas' sand grouse in very perfect plumage. It was shot by a labouring man, in the first week of June, at North Burton, a village situated near Bridlington, in the East Riding. This bird was accompanied by another, probably a female. The man who shot it stated that "it was making a great noise at the time." No other specimen that I am aware of has occurred so near Beverley, although several have been seen, and a few captured, in the neighbourhood both of Scarborough and Whitby.—*W. W. Boulton; Beverley, August* 4, 1863.

The Sand Grouse at Heligoland.—This very beautiful and interesting stranger was first observed and shot here on the 21st of May, the weather being very fine, with a moderate easterly breeze. Each successive day, up to the earlier part of June, it was seen here in flocks varying from about three, five, fifteen to fifty, and in one or two instances even to a hundred. Out of these nearly thirty have been shot; the earlier birds being, with two exceptions, all very fine male specimens, the later nearly all female birds—every one of them in the most perfect plumage. After a lapse of a fortnight, *viz.*, on the 22nd of June, six sand grouse again made their appearance: out of these five were shot—all female birds—whose plumage no longer had that fresh and tidy appearance of the earlier instances; so that all through this abnormal and mysterious excursion of this species they still adhered to the rules of birds on a regular spring migration—that is, the males forming the van, the finest old specimens coming first, after which the females make their appearance, and the rear being invariably brought up by weak, badly-developed or injured individuals of a shabby appearance. I was so fortunate as to obtain two living specimens of this sand grouse, a male and a female, both of which for awhile went on very well; but yesterday, to my great regret, I discovered that the female had died. The abdomen of this bird had the appearance as if containing a developed egg, which on examination, however, proved to be a solid accumulation of a gritty calcareous substance of the size of a large walnut. It would be very interesting if these birds were to breed on the English moors. Although I have little doubt that, if at convenient localities they are left undisturbed, such will be the result, it also is my opinion that in autumn the offspring, together with the parent birds, will depart for their original fatherland never to return. But a future different result would perhaps be attained if such young birds were to be procured before fully fledged, kept well during the winter, and set at liberty the following spring near such localities as their parents had chosen for nidification. If during this season any young sand grouse are reared in England or on the Continent, I am sure one or other of them will turn up on Heligoland.—*H. Gatke; Heligoland, July*, 1863.

Colour of the Eggs of the Golden Plover.—I have long observed, with no little perplexity, the remarkable variety of colour which occurs among the eggs of the golden plover, and the regularity with which each colour in its turn predominates according to the advancement of the season. Every year I see large numbers of the eggs, and the general rule appears to be that those which are laid early in the season have a dingy hue, the ground colour being strongly tinged with dull olive-green, and that a little later this commences gradually to become less frequent, giving place to creamy white, sometimes richly tinged with warm yellowish brown: the latter colour is deepest and most common in June and July, when the breeding season is drawing to its close. At this time, also, the spots and blotches are very abundant, and more of a reddish brown.—*Henry L. Saxby; Baltasound, Shetland, July* 14, 1863.

Green Variety of the Oystercatcher's Egg.—A very uncommon variety of the oystercatcher's egg has just been brought to me, its general hue being pale grayish green, a colour which I have never before observed in the egg of this species. The spots are unusually small, and chiefly confined to the broad end. Two other eggs found in the same nest are of the usual colour.—*Id.*

Redshank breeding in Shetland.—The redshank is very frequently described as breeding regularly in Shetland, but, whatever the case may have been in former times, it is very certain that the nest is now very seldom met with here. During the last six years I have only twice seen the nest, although I have heard of its discovery upon two other occasions. The eggs are very rarely to be seen in the collections of the Shetland dealers.—*Id.*

The Squacco Heron (Ardea comata) *in Norfolk.*—A magnificent adult male of this beautiful species was killed on Surlingham Broad, near Norwich, on the 26th of June. Being from home at the time I unfortunately did not see it in the flesh, and can therefore say nothing as to the contents of the stomach or the true colours of the bill, legs, &c., which I much regret, as the bird is so rarely met with in England. This species has occurred in Norfolk before in two or three well-authenticated instances, but not within the last thirty years.—*H. Stevenson; Norwich, August* 2, 1863.

Note on the Orangelegged Hobby in Suffolk.—I have recently purchased a young male of this species, which was killed at Somerleyton station, near Lowestoft, on the 12th of July, 1862. The bird had been seen and shot at once or twice by the stationmaster, but was secured at last by a gamekeeper on the Somerleyton estate, who sold it to a birdstuffer in this city. The bird is somewhat rough in plumage, having but just commenced moulting its adult feathers. The last specimen observed in the eastern counties was killed near Norwich in 1843,—a fine old male, now in our Museum. —*Id.*

Capture of the Black Swan near Beverley.—Early in the morning of the 1st inst. a labouring man observed a strange bird on the river Hull, near to a hamlet called Baswick, situated between six and seven miles above Beverley, and about the same distance from the sea, as the crow flies. He succeeded in stalking and securing it, and it was brought to me for sale. This bird proved to be a fine male specimen of the black swan (*Cygnus atratus*). It is at present in the hands of Mr. R. Richardson, taxidermist, &c., Beverley, who has been entrusted with the charge of mounting it.

I have just seen the skin removed, and took that opportunity of partially dissecting the body. Its total weight in the flesh was eleven pounds. There was no fat, but the sternum was pretty well clothed with powerful muscle. Its measurements were as follows:—Extreme length from tip of bill to tip of tail, four feet five inches; from the end of the third feather of one wing (this being the longest feather) to the same point on the opposite wing, extended, six feet five inches. The bill brilliant scarlet to within an inch of tip, at which point a band of a pink or roseate hue extends across from side to side, about half an inch wide in the broadest part. Between this band and the nail is a second narrow line of brilliant scarlet, the same as on the greater part of bill. The nail itself is of the same rosy hue as the broad band above it. Iris pearly, but tinged with a roseate blush. Colour of head, breast and belly dark sooty slate or ash-colour, rather lighter on the belly. The neck and back several shades darker. Primaries, secondaries and some of the tertiaries on either side pure white. Scapularies and some of the wing-coverts glossy black, several of the latter on each side being curled outwards, upwards and backwards. Legs dark sooty gray. Webs sooty black. Toes sooty gray. The gizzard contained a considerable quantity of vegetable matter,—grasses and seeds of grasses, mixed up with innumerable fragments of very small flinty gravel. The organ itself was large and immensely muscular and powerful, the inner grinding surfaces feeling like rough bony plates. The testes were about an inch or rather more in length, and of a creamy white colour. Both the wings were perfect and unpinioned, the number of feathers on either side corresponding. The plumage generally was very fine and unsullied, although the bird had slightly commenced moulting. I am unaware of the black swan having been kept or bred in a state of captivity in this Riding, and my specimen has every appearance of being an undoubtedly wild bird, which the unpinioned wings (although the bird is mature) and the state of its plumage would tend to corroborate.—*W. W. Boulton; Beverley, August* 4, 1863.

Richardson's Skua in Kent.—I had a beautiful specimen of this bird brought me this morning.—*E. Young; Sittingbourne, July* 1, 1863.

Scarcity of Summer Migratory Birds in the East Riding of Yorkshire.—I have only observed a single specimen of the common swift, usually very abundant here. It was flying to and fro in an agitated and unusual manner, as though frightened or lost, at a great height over some corn-fields, and in the company of common swallows. Swallows and house martins have also been unusually scarce. Whitethroats and the common warblers, generally very abundant in this locality, have been quite occasional during the present summer. The whinchat and pipits occur also in very small numbers. Indeed all our summer visitants have appeared more sparingly this year than I ever recollect.—*W. W. Boulton; Beverley, August* 4, 1863.

Toads in Stone.—Your animadversions (Zool. 8642) on the statements of Sir A. P. Gordon Cumming concerning toads found in rock do not appear to me to have been written with your usual candour and philosophic spirit. You object to the term "scampering away" as inapplicable to the action of toads. I am in the habit of keeping several toads in my plant-houses, and I certainly should not hesitate to use the term "scamper" to describe the uncouth hurry with which they jump and shuffle off when my footstep comes suddenly behind them. But granting that a better term might have been selected, is the choice of an unsuitable word in a composition a sufficient reason for rejecting a statement of a fact? Must not a cause be feeble which rests on such an objection as one of its twin pillars? But let us try the strength of the other pillar. A certain "idea" (Is this word any better than "scampering"? Is an intention an idea?) "seems to imply" that no intelligent person has been present at the affirmed exhumation. A gentleman of position affirms, "I have myself seen numbers of living toads taken out of the conglomerate at depths of from fifteen to twenty-four feet from the surface." Is Sir Alexander Gordon Cumming not an intelligent person? You distrust the assertions of quarrymen who are rewarded for their tales by beer; but you have not stated any evidence that these quarrymen were so remunerated. Have you any such evidence? I do not think that this is the way in which we should seek to arrive at truth on a mooted question in Science.—*P. H. Gosse; Torquay, July* 18, 1863.

Occurrence of the Dory (Zeus faber) *at Banff.*—A specimen of the above curious-looking, and at this place rare, fish was taken in our bay in a salmon net, on the 8th inst.—*Thomas Edward; Banff, July* 10, 1863.

New Genus of Fishes.—In May last a few specimens of a new genus of fishes were taken here. The species is to be named in honour of the late Mr. Thompson, of Belfast. A figure and description will appear in Mr. Couch's new work on our British Fishes, now in course of publication. It is a very small species, but vies with the beautiful argentine in the brilliancy of its colours.—*Id.*

The Great Sea Serpent.—The following is a copy of a letter from an officer of the African mail steamer 'Athenian,' addressed to a gentleman in this town:—"African Royal Mail Screw Steamer 'Athenian,' Cape Palmas, May 16, 1863.—My dear Sir,—All doubts may now be set at rest about the great sea serpent. On the 6th of May the African Royal Mail steamship 'Athenian,' on her passage from Teneriffe to Bathurst, fell in with one. At about 7 A.M. John Chapple, quartermaster, at the wheel, saw something floating towards the ship. He called the attention of the Rev. Mr. Smith and another passenger, who were on deck at the time, to it. On nearing the steamer it was discovered to be a large snake about 100 feet long, of a dark brown colour, head and tail out of water, the body slightly under. On its head was something like a mane or sea-weed. The body was about the size round of our mainmast. You are at liberty to publish this."

Irish Notes on Entomology. By EDWIN BIRCHALL, Esq.

*Cœnonympha Typhon, *Kirby's Manual*, 70. I captured this insect on the boggy moors of the south-west of Ireland, at the end of June. It is closely allied to C. Davus, but is a larger insect, and the eyes on the under side of hind wings are very faintly indicated, in some specimens they are entirely absent. Mr. Doubleday has kindly examined specimens of the Irish insect, and agrees with me in considering them identical with Kirby's C. Typhon, which he informs me is the typical C. Davus of the Continent, the specimens taken on the Lancashire Mosses being the C. Rothliebii of some of the German authors. They are abundant all round the lakes of Killarney, but do not seem to ascend much above their level. In the woods which clothe the base of the surrounding hills Satyrus Ægeria and S. Hyperanthus flit about in great numbers. On the mountain slopes above I saw only C. Pamphilus and an occasional Lycæna Alexis. I shall be glad to send specimens of C. Typhon to any entomologist who wishes for them.

*Zygæna Minos. This insect did not make its appearance until the 1st of July, ten days later than usual. The spring and early summer were cold in the West of Ireland. The insect was as abundant as in former years.

*Hepialus Hectus. At Torc Waterfall, near Killarney. When their flight is over they conceal themselves on the under side of the fronds of the brake fern (*Pteris aquilina*). The posterior tibia in the males of H. Hectus is dilated into a regular club foot, the tarsus being entirely wanting. None of the other British Hepialidæ appear to possess this singular structure, and I am quite ignorant what end it serves. Possibly a too exclusive search for what we deem a use in the works of Nature sometimes diverts our attention from the true explanation of abnormal forms, and there may be wisdom as well as wit in Sydney Smith's remark on the toucan, "What is the use of a bird with a beak a foot and a half long, looking for insects all over South America, and barking like a puppy dog?"

*Dianthœcia capsophila. Flying over flowers in the middle of June. I also obtained a number of the larvæ, of which I hope Mr. Newman will supply a detailed description. The insect is either double-brooded or appears throughout the summer, as I have taken it on the wing in June, and again in August, quite fresh.

D. conysta, *Fab.* A pair of this species exist in the collection of Trinity College, Dublin. They were originally in the collection of the late Mr. Tardy, and there appears no reason to doubt were captured by him in Ireland.

*Aspilates strigillaria. Very abundant among Myrica Gale. They are larger and more suffused in colour than the English type. I have duplicates for all who care for them.

I took the following twelve species of Eupithecia in the west of Ireland, from the 18th to the 27th of June :—E. venosata, subumbrata, plumbeolata, satyrata, castigata, constrictata, nanata, vulgata, absynthiata, pumilata, rectangulata and *debiliata. The last named in some numbers among holly trees, which, however, it appears to frequent only for concealment. It prefers old trees, settling on the stems and branches, and is then extremely difficult to see, although it may have been observed to alight.

*Eubolia lineolata. Several taken on Mangerton, at an elevation of about eight hundred feet above the sea. This appears a singular locality for a coast insect, and it has not been previously recorded as occurring in Ireland at all. Perhaps it is a straggler from the coast fauna of a time when the lakes of Killarney were like Glengariffe, an inlet of the ocean ; and that they were so at no very remote geological period there is the further evidence that a thoroughly sea-side fern, Asplenium marinum, still clings to the cliffs of the upper lake, though in a very stunted condition.

*Hypena crassalis. This insect is not uncommon in the south of Ireland. It flies along the roads in the sunshine, resembling Plusia Gamma in its mode of flight. It may also be beaten from holly trees.

Bombyx Quercus. Well-marked specimens of the variety Callunæ occurred on the moors of the south of Ireland.

*Emmelesia tæniata. A fine series beaten from holly from the 18th to the 27th of June. I have heard the larvæ spoken of as a hazel feeder, but am not aware whether this has been really observed. There is very little hazel in the locality where I obtained E. tæniata, and although diligently beaten it produced no moths. The habit of the other British species of Emmelesia would lead one to expect E. tæniata to feed in the capsules of a Lychnis or Silene.

Lithosia aureola. Full-fed larvæ taken June 20th ; moths emerged July 15th.

Lithosia caniola. Larvæ taken June 24th, sunning themselves on stones ; spun up July 10th.

Setina irrorella. Frequent on West Coast.

I also met with the following species whilst in Ireland this summer, and have duplicates of those marked with an asterisk :—P. lacertula, P. falcula, H. contigua, P. festucæ, V. aureum, *E. fuscula, *B. argentula, *H. unca, M. hastata, *A. viretata, C. temeraria, C. taminata, M. notata, A. fumata, S. Belgiaria, E. scutulana, E. trigeminana, *S.

littorana, *S. amænana, *E. albicapitana, *Ent. Ann.* 1862, 111, P. leacheana, P. ochromelana, P. annulatella, C. pinetellus, C. margaritellus.

*Cossonus tardii. This insect was in profusion in the timber on the islands in the lakes of Killarney. I could not find the insect on the mainland: no doubt it exists there also, but has been able to spread itself widely in one case and not in the other.

An Ungallant Irishman.—The driver of the mail car from Kenmare amused me by his explanation of the constant rain through which he performs his journey for the greater part of the year: "All de old women in Kerry tink dey'd be broke and get no grass for de cow if dere was a month of fine weather, and dey do be always prayin' for rain."

Limneus involutus. From a little town near the summit of Cromaghlan Mountain I obtained a number of this curious and fragile shell. I believe there is no other known locality. The animals attach themselves to stones about six inches below the surface of the water, and great care is required in detaching them, as the shell breaks with the slightest pressure.

On my way home through Wales I met with the following Noctuæ at sugar:—*Agrotis corticea, *A. porphyrea, *A. lucernea, *A. Ashworthii, *Cerigo cytherea, *Mamestra furva. A. lucernea and M. furva especially were in great profusion.

EDWIN BIRCHALL.

Oakfield Villa, Birkenhead,
July 24, 1863.

Note on an unobserved peculiarity in the Larvæ of Liparidæ.—When describing the larvæ of Liparis auriflua and Orgyia fascelina I was particularly struck with an anatomical character which I have seen nowhere described. I have, in the published descriptions, spoken of it as a valvular opening on the back of the tenth and eleventh segments. These openings are very conspicuous, and occur also in the larvæ of Liparis chrysorrhæa, L. Salicis, L. monacha, Orgyia cænosa, O. gonostigma and O. antiqua; and in all probability in every other species of the family, although I will only speak of it in those species to which I have given especial attention. I need scarcely mention to a company of entomologists how remarkably the Liparidæ differ from the other Nocturni in having the pupa clothed with hair; but the distinction I have now pointed out renders them still more separate, and leads to the consideration, What can be the object of this singular provision of Nature? We are well aware that the larvæ of Lepidoptera have on each side nine valvular openings through which the creature breathes, and the connection of these with the tracheæ, which are in truth the lungs of an insect, has been fully proved by Herold, Straus-Durckheim and Lyonnet; but no one has ever indicated the presence of breathing holes or spiracles in the back. Yet what else can we call these openings? as the larva breathes the action of these openings becomes very obvious; they appear to open and close with great regularity, reminding one very forcibly of the rhythmical breathing of fishes, in which we see the gills open and close in the most methodical manner. The point still to be ascertained is this, Are the dorsal valvular openings connected with the tracheæ? It is not for me to prosecute the enquiry; I leave it to younger heads and abler hands, and I am well aware that there are those among the members of the Haggerstone Society who have not merely the talent, but the perseverance and assiduity, to conduct the inquiry to a successful issue.—*Edward Newman.—Read before the Haggerstone Entomological Society.*

The York Moth Trap.—As the most prolific period of the season to search the gas lamps for moths is fast approaching, I will endeavour to explain a contrivance to facilitate their capture in such positions without having each time to climb the lamp-post, an accomplishment for the trouble of which the only reward so often is a species "abundant everywhere," and which not seldom deters one from making an ascent when the reward would be of greater value. To remove this drawback I have adopted the following expedient. Take a number of smooth, round turned wooden boxes, say two and a quarter inches in diameter, and have a rectangular tin frame then made, near two and a half inches long, and open at each end, into which any one of these boxes without the lid will slide on the application of a slight pressure. Each box must have on the side a small loop of wire for a swivel and band to be attached to when used. On each side of the tin frame is soldered a piece of watch-spring about a quarter of an inch in width, extending an inch beyond the open end, bent inwards to grasp the wooden box and hold it in a steady position outside the tin frame, and also to allow it to be easily drawn within. At the opposite end is a small stop or projection to top and bottom, to keep the wooden box when used from moving in that direction beyond the tin case. Midway on each side of the frame a small punched piece of tin with a hole in the middle must be placed, into one of which will fit a pin and in the other a screw belonging to the two extremities of a pair of brass arms permanently attached to a socket of the same material, into which can be placed the end of a rod. The tin frame, with a box within it, is now placed between the brass arms, and by means of the screw and pin, upon which the frame works as on a centre, and adapts itself to the position of the lamp or object on which the moth is sitting. When in use the wooden box held by the springs must be upwards, and the loop on the box will be downwards. The rod must of course be long enough to reach the usual height of the lamps, for which two or three sections of a fishing-rod may be made available. Now attach a cord (nearly the same length as the rod) to a small swivel or hook, and the swivel to the loop on the box, the string coming through that end of the frame where the stops are. After placing the rod in the socket push the box out so as to be held by the springs, and by aid of the rod place the box over the insect at rest, then steadily draw the box within the frame by means of the string, which will effectually secure the moth. Now bring down the rod and disengage the swivel from the loop, then gently push the box out, at the same time carefully putting on the lid, and substitute another box prepared in the same manner as the previous one, repeating the operation as before.—*Robert Anderson; Coney Street, York, August* 12, 1863.

Note on Procris Geryon.—The Rev. E. Horton, of Wick, near Worcester, discovered the larvæ of Procris Geryon feeding upon the yellow Cistus (*Helianthemum vulgare*) in the early part of last May, and kindly forwarded a portion of them to me, and also some cocoons which were found in the moss at the roots of the Cistus. This interesting discovery has satisfactorily proved that P. Geryon is quite distinct from P. Statices, the larva of which, although it bears a general resemblance to that of P. Geryon, can be easily separated from it, and I believe P. Statices is seldom, if ever, found upon the dry limestone soil on which P. Geryon occurs. My valued friend M. Guenée found this species in great profusion on the Pyrenees last summer, and kindly sent specimens to me, which are identical with ours. I have also received some captured near Vienna, from Dr. Staudinger, and within the last few days a male from Herr Zeller. My friend Mr. Buckler kindly sent me two beautiful drawings of the larva of P. Geryon, which I have forwarded to M. Guenée, who, I am sure, will be much pleased to hear that Mr. Horton's perseverance has been rewarded by the discovery of this previously unknown larva.—*Henry Doubleday; Epping, August* 14, 1863.

Description of the Larva of Acidalia subsericeata.—Last summer, when staying with my friend the Rev. O. Pickard-Cambridge, at Bloxworth, I captured a female specimen of Acidalia subsericeata, which deposited a few eggs. These hatched in about a fortnight. The young larvæ fed freely till the end of October upon Leontodon taraxicum (dandelion), Solidago virgaurea (golden rod) and plum. They then became somewhat torpid and inactive, but continued to feed sparingly throughout the winter upon dandelion. In March they again began to take kindly to their food, and grew apace. They were full-fed towards the end of April, and the perfect insects appeared in June. As this larva has not, I believe, been previously described, the following description may prove interesting to the readers of the 'Zoologist' and the entomological world in general. Slender, tapers considerably towards the head. Ground colour dull whitish gray. Back reddish. Central dorsal line black, very slender and indistinct. Subdorsal line same colour, but broader and more distinct upon the capital and anal segments. Spiracular lines dull yellowish white, puckered. On each side of the tenth segment, which is slightly enlarged, a dull yellowish spot. Centre of belly whitish; on each segmental division a black oval spot slightly edged with white. Ventral segmental division black. Head whitish, with a central black line. Anal segments whitish. Whole body rough, wrinkled, minutely studded with whitish tubercular spots, and sprinkled with a few short bristly hairs. Pupa mahogany-brown, enclosed in a slight web among dead leaves.—*H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, August* 5, 1863.

Emmelesia Blomeri in Derbyshire.—Yesterday (July 24th) I went to a wood, about a mile and a half from my house, to look for the larvæ of Eupithecia valerianata. While doing so I disturbed a small Geometra, which, as I had no net, I knocked down with my hat. To my unbounded astonishment I fonnd it to be a specimen of the above insect. It was of course very much wasted. I was in hopes that it might be a female, but unfortunately it is not. I should suppose that the larva is now feeding, and if any of your readers can give me any information about it and its food I shall feel greatly obliged. I regard the discovery of this species here as very interesting. It is, as is well known, extremely local. Upon referring to the 'Manual,' I find the following localities, widely apart, *viz.*, Bristol, Cotswolds (commonly), Newnham, Newcastle-on-

Tyne, Scarborough (commonly), Castle Eden Dene and Preston. I am myself the authority for the Cotswolds. The insect occurred there not uncommonly in June, resting upon the trunks of trees. The wood consisted chiefly of alder, birch and wych elm. The same trees prevail here, and I should imagine, therefore, that if the larva feeds on trees it must probably be one of these. I should be glad if any of your Scarborough readers could tell me where E. Blomeri is commonly taken in that neighbourhood, as I collected there for two years but never saw the insect. This, however, might easily happen, as, though I have every summer for the last five years carefully searched the wood already alluded to, it was only yesterday I discovered that the insect was to be found in it. I trust this communication may strike the eye of some entomologist able and willing to give me information about the larva.—*Joseph Greene; Cubley Rectory; Doveridge, Derby.*

Description of the Larva of Emmelesia alchemillata.—Short, stout and stumpy. Ground colour dull red, suffused with yellowish green, or *vice versâ*. Central dorsal line broad, yellowish green, with a slender dark green line in the centre. Subdorsal lines red, edged with yellow. Head flattened, dark reddish brown. Spiracular line greenish yellow. Belly greenish yellow, with two darker green subventral lines. Back and sides studded with a few very short whitish hairs. I found this larva feeding somewhat abundantly in August and September, 1862; it was feeding on the leaves, flowers and unripe seeds of Galeopsis tetrahit, and somewhat more sparingly on those of G. ladanum. Pupa enclosed in a tightly-spun earthen cocoon, yellowish green slightly tinged with red.—*H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, August* 5, 1863.

Eupithecia succenturiata.—During the last two years I have reared this larva from the egg, and from their food-plant (Artemisia vulgaris) taken many larvæ. I must have bred nearly two hundred specimens, and not the slightest approach to E. subfulvata in the whole lot. The distinction between the two species in the larva state is exceedingly well described by the Rev. H. Harpur Crewe. I have bred both species from the egg.—*R. S. Edleston; Bowdon, near Manchester, August* 14, 1863.

Capture of Acronycta Alni near Manchester.—I found a larva of this insect on a beech tree by Hale Moss, near Altrincham, on Thursday last, August 20th.—*E. M. Geldart; Rose Hill, Bowdon, Cheshire, August* 22, 1863.

Economy of Cataclysta Lemnalis.—I have bred a good many of this species this season from larvæ collected in April and May. These came out in July, and even up to now some have come out. I also got some pupæ at the same time as I collected the larvæ, which came out in May and June; and about a week ago I saw some cases under the leaves of Hydrocharis Morsus-Ranæ, with larvæ nearly full-fed: these will, I presume, remain in pupæ until next May or June. The larva of this species is sooty brown or brown-black, paler between the rings. Head yellow-piceous, the latter half velvety-black; mouth ferruginous; the apex of the jaws blackish. Prolegs black. Body sparsely covered with hairs. These larvæ are very active, and run out of their cases when alarmed, and in general appearance so much like Tortrix larvæ that, divested of their cases, it would be difficult to distinguish them from that group. Under water these larvæ appear as if coated with silver, from the air which invests their bodies, and which supplies them with oxygen while immersed in the denser medium of the two gases combined. Generally speaking these larvæ construct cases of Lemnæ and bits of grass, which float about in a submerged form, the upper part of the cases floating at or very near the surface, the larvæ being partly submerged; and again, as mentioned above, they sometimes select a floating leaf and construct a case under it. In most instances they undergo their metamorphoses in the same case in which they lived; but in some they leave it, and select a bit of the leaf of Sparganium, &c., about an inch long. In this they eat a hole, and then attach the piece to a living leaf by a few silken threads, when it is prepared to undergo the wonderful change.—*Edward Parfitt; Devon and Exeter Institution.*

Economy of Galleria Mellonella, Lin.—I have lately bred a good many of this species from a mass of cocoons that were forwarded to Mr. Woodbury, the apiarian, from Norfolk. This gentleman handed them to me for identification. The mass of cocoons, which was about the size of one's fist and very firmly spun together, was of a rather dull white colour, and was not put together with any degree of regularity, although, generally speaking, the ends from whence the moths would escape were left free. The silk of which the cocoon was made is very fine and exceedingly tough, so that they are with difficulty separated from each other. The end from which the insects would escape, or rather have escaped, is closed by a double covering somewhat similar to that of Saturnia Carpini, so that nothing could intrude itself upon the sleeping pupæ; at the same time an easy exit was provided for the moths. The cocoons were given to me on the 6th of March, and the moths began to come out on the 30th of July, and continued coming out until the 20th of August, so that they remain in pupæ from five to six months. Two larvæ had not spun up when I received them, so that I was able to make a description, of which I give a transcript. Larva tapering from the head towards the tail, dull grayish yellow. Head and second segment reddish testaceous, shining; this segment is divided in the centre by a pale line, which is continued along the back; beneath pale dull white. The abdominal segment is divided into two lobes; spiracles dusky. The whole larva sparsely scattered with long hairs. Pupa reddish brown, the antennæ and wing-cases very distinctly showing; a sharp serrated dorsal ridge runs as far as the fourth segment from the tail, and is continued interruptedly to the apex, where it ends in four hooks directed downwards; the anterior portion of this ridge is double. There are four stiff setæ in each segment directed downwards, apparently to assist the pupæ in moving. —*Id.*

Remarks on Mr. Kidd's Note on Mounting Mines of Micro-Lepidoptera on Cardboard.—In the July 'Zoologist' (Zool. 8648) is a note by Mr. Kidd on a new method of mounting the mines of small larvæ on cardboard, which plan he considers superior to that of Mr. Stone, who mounts them on glass, as exhibited by Professor Westwood. Mr. Newman kindly showed me the specimen, and I must take exception to the supposition that it is less cumbrous than those on glass. If the specimen I saw was a fair sample I can only say that it was more cumbrous; and as to being able to see both sides of the mine, is it not generally considered that glass is transparent? Mr. Kidd will, I am sure, excuse me for calling his attention to a most important error in his note. He alludes especially to Lithocolletis mines and to a Lithocolletis mine in bramble. Now a mine of this genus is usually no very beautiful object, being a mere inflated blotch, but I must confess that a bramble-leaf with such a mine would be particularly interesting, as no species of the genus is known to affect this plant. A little further attention to the note, and especially to Mr. Newman's postscript, convinced me that all hopes of a novelty were premature, and that the mine in reality was a gallery of the common Nepticula aurella, a conclusion at once confirmed by a sight of the leaf. A little more care in making statements of this kind is absolutely necessary in writing on scientific matters. Errors once in print are very liable to be perpetuated. To those who have paid much attention to the subject the one above mentioned is obvious enough, but those unacquainted with the habits of Micros might be easily misled, and it is a true saying that "first impressions are the strongest," and most difficult to shake off.—*R. M'Lachlan; 1, Park Road Terrace, Forest Hill, August* 6, 1863.

Coleophora artemisicolella, Bruand.—I have bred this species from the cases feeding on the seeds of Artemisia vulgaris.—*R. S. Edleston; Bowdon, near Manchester, August* 14, 1863.

Description of a New British Zeugophora.—I send a brief description of what I conceive to be an insect hitherto undescribed, recently taken by Mr. Charles Turner in Scotland. I can find nothing answering to it in Gyllenhal or Reichtenbacher, nor in any of the books to which I have access, and it certainly is not enumerated in the Stettin Catalogue. I therefore venture to call it Zeugophora Turneri, after the indefatigable and unrivalled collector who discovered it, and who richly deserves some such acknowledgment of his exertions in the cause of British Entomology.

ZEUGOPHORA TURNERI, *Power*.

Has the facies, general appearance, puncturing and pubescence of an immature specimen of the common Z. subspinosa, but is somewhat larger and a little more elongate. It is the only European species that I am acquainted with in which the elytra, thorax, head, antennæ and legs are uniformly testaceous-yellow. The abdomen, mesosternum, metasternum and eyes are alone deep black. The apex of the mandibles is slightly pitchy. When compared with Z. subspinosa the head is more rugose and less polished, less suddenly constricted behind, and the eyes are less prominent, causing the form of the head to appear less triangular; but the most remarkable structural distinction is in the thorax, which differs from that of Z. subspinosa in being decidedly broader, and the characteristic lateral projection is more prominent and more abruptly produced, and instead of gradually sloping off towards the anterior margin of the thorax, which exhibits a very slight angular projection on each side, it is continuous, with a large angular process, giving the appearance of a kind of sinuous "outrigger," and causing the anterior thoracic margin to appear very broad and level with the outer third of the eye, whereas in the other species it extends little beyond the inner border of it. I have examined a very fine series of the insect, and find no variation whatever. It feeds, I believe, on the birch. In the collection of the British Museum I find two specimens of an unnamed Zeugophora very like this insect (if not identical with it), collected by Mr. Barnston in the neighbourhood of Hudson's Bay. They are awkwardly pinned, and appear somewhat shorter, with the antennæ a little stouter, and the abdomen is testaceous, but with a tendency to be pitchy towards the base. They may be immature. Mr. Turner has also, amongst other rare insects, obtained a few most magnificent specimens of the beautiful Athous undulatus, which he discovered at Rannock about three years since, but of which, until the present time, we were acquainted only with one broken specimen in the collection of the British Museum, and a pair of elytra in that of the Rev. A. Matthews.—*John A. Power; 52, Burton Crescent; August* 18, 1863.

Monohammus dentator: Is it British?—In April last I had two larvæ of this species brought to me feeding on English larch: one was damaged, and consequently died, the other I have bred, and it came out on the 17th of this month, a fine female. About a dozen years ago I bred a male from larvæ obtained at the Liverpool Railway Works, whilst cutting timber for sleepers. During the past thirty years a year has seldom past but I have either received this species or known it to have occurred in this neighbourhood; in fact, I think it has naturalised itself a few miles from here, but I do not like to publish the locality, for fear it should share the same fate as Sesia Scoliæformis, although I have not the slightest objection to give the information to any gentleman in whom I may have confidence, so as not to destroy its breeding.—*S. Carter ;* 20, *Lower Mosley Street, Manchester.*

Serpula contortuplicata throwing off its Operculum.—On the 2nd of August a very fine Serpula contortuplicata in my tank threw off its operculum, and from all I had read on the subject I expected nothing but its death as the result. For six days I watched, each morning supposing I should find it stretched helpless on the pebbles. But no! On the 7th I noticed that the tiny secondary trumpet had so enlarged as to become somewhat conspicuous, while the animal continued in apparently first-rate health. It is now three weeks since the loss of the first operculum. The new one has assumed perfection as to shape, size and use. The only falling short in the present organ is that it does not quite enclose the tips of the gills when the Serpula retreats into its tube. The fans, too, have contracted rather a ruffled look from the temporary loss of their protection.—*Edith Acraman ; Ilminster, Somersetshire, August* 24, 1863.

Remarks on Planorbis corneus.—About five years ago I introduced two specimens of Planorbis corneus into a fresh-water aquarium situated in a southerly aspect. The aquarium was previously tenanted by specimens of Paludina Listeri from Southport ditches, which increased rapidly; also by Dreissina polymorpha, Bithynia tentaculata and a few golden carp (*Cyprinus auratus*). The aquatic plants were Hottonia palustris, Hydrocharis Morsus-Ranæ, &c. The lively habits of the Planorbis contrasted favourably with the sluggish Paludina, and I soon took a special interest in watching them. At any approaching change of weather they range themselves, as do also the Paludinæ, at the edge of the water. A slight touch of the finger and they drop instantly to the bottom of the vase, from whence they rise by an almost imperceptible motion. They have the power of floating shell downwards at the top of the water, the mouth being at the surface, which at such times is rapidly moving, as though it used it as a means of locomotion. When travelling at the sides of the aquarium a considerable portion of the body of the animal is sometimes exposed, a tempting tit-bit to a hungry fish, whose attempts at scraping an acquaintance are rejected unceremoniously by presenting his shell for acceptance, which being tolerably hard and too large for Mr. Carp, is at once declined. Smaller specimens are, however, occasionally taken into the fishes' mouths, but speedily ejected with considerable force. One of the two specimens of Planorbis died a few months after I received it, and the fish having also, one after another, followed its example, I placed the aquarium outside the house for the winter. Some months after the death of the first Planorbis I found that the survivor had deposited several patches of a gelatinous matter at the sides of the glass, and also on the under sides of the Hydrocharis.—'*Naturalists' Scrap Book,*' Part 6, p. 94.

Zoological Miscellany.

Structure of Blood Corpuscles.— Dr. Wm. Roberts, of Manchester, has communicated to the Royal Society an account of experiments with human blood corpuscles, and those of other vertebrate animals. The reagents he employed were a solution of nitrate of rosanilin (magenta), prepared by making a nearly saturated solution by boiling the salt in water, filtering after twenty-four hours, and then slightly diluting it; and a solution of tannin, three grains to the ounce of water. A speck of human blood was mixed with a drop of the magenta solution on a glass slide; the corpuscles became transparent and of a faint rose-colour; they expanded sensibly, lost their bi-concave figure, and a dark red spot made its appearance on some portion of their periphery. When the blood of the oviparous vertebrates was employed, the central nucleus came fully into view, and assumed a deep blood-red colour; the oval form of the corpuscles was lost, and a dark red spot appeared on their periphery. Tannin caused the corpuscles to bud or pullulate; one drop of blood mixed in a conical glass, with four or five of the solution, generally answered perfectly. The pullulations were easily seen under the microscope, by placing a drop of the tannin solution beneath the covering glass, and permitting a little blood to insinuate itself under it. The pullulations appeared organically connected with the corpuscles, but to form no part of their cavity. Dr. Roberts concludes from his researches that the mammalian corpuscles are homologous, as wholes, with those of the ovipara, and not with its nucleus, as supposed by Wharton Jones; and that the envelope of the blood disk is a duplicate membrane; in other words, that within the outer covering there exists an interior vesicle which encloses the coloured contents, and in the ovipara the nucleus. He observes that Dr. Hensen, of Kiel, had attributed this structure to the blood corpuscles of the frog, and that in this view the blood corpuscle is anatomically analogous to a vegetable cell, and the inner vessel corresponds to the primodial utricle. Further details will be found in the 'Proceedings of the Royal Society,' No. 55.—'*Intellectual Observer' for August*, 1863, p. 68.

Vivisection.— This horrible practice has at length obtained public notice and reprobation in the influential columns of the 'Times' newspaper. I hope that every reader of the 'Zoologist' will do his utmost to promote the benevolent project now on foot to prohibit, by legal enactments, both in England and France, a practice so utterly indefensible on scientific or utilitarian grounds, and so repugnant to the feelings of a man.—*Edward Newman.*

Petition.—I shall feel extremely obliged for good specimens of the following common insects: — Bombyx Quercus, Boarmia rhomboidaria, Cidaria russata and C. immanata: I hope entomologists will not be deterred from assisting me by the fact of my offering nothing in exchange.—*Id.*

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August 6, 1863.

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DOUBLE NUMBER. — It will be observed that pp. 8697 to 8708, in this September number, properly belong to the July number: delay in publication is very inconvenient, and I have resolved to publish a Double Number in October, to fetch up the arrears. This will be charged TWO SHILLINGS.

Error.—At page 8702, line 14, in the present number, is an important error. Tæniocampa gothica appears in March and April, and does not hybernate.

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